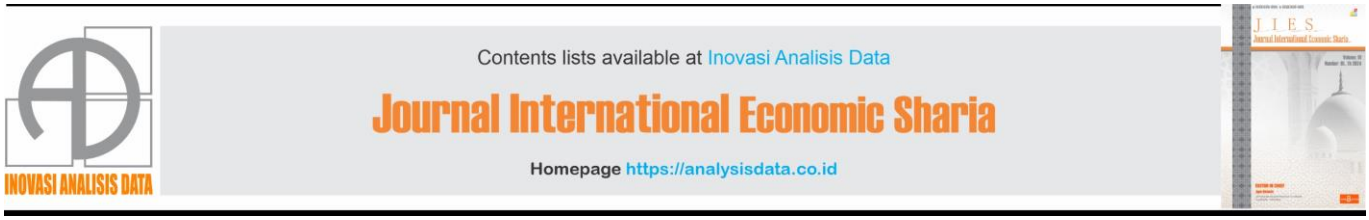
E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101 -120
DOI: https://doi.org/10.69725/jies.v1i2.140



Impact of Shari'ah Supervisory Board Diversity on the Performance of Islamic Banks: Evidence from Yemen Emerging Economy

Gehad M. S. S. [a], **Ardiani Ika Sulistyawati** [b], **Abdul Karim** [c], **Happy Sista Devy** [c],

[a.] *MBA Finance, Bachelor of science with honors in Accounting, Faculty of Administrative Sciences, University of Aden, Aden, Yaman.*
[b.] *Departement Of Accounting, Economics Faculty, Semarang University, Semarang, Indonesia*
[c.] *Syariah Finance, Syariah of Economics, University of Semarang, Semarang, Indonesia*
[d.] *Financial Management, Syariah of Economics, Pekalongan State Islamic Institute, Pekalongan, Indonesia*

ARTICLE INFO

Received 10 June 2024
Received in revised 5 July 2024
Publication 10 September 2024

Correspondence;
Gehad

Keyword;
Shari'ah Supervisory Board, diversity, Islamic banks, financial performance, governance.

ABSTARCT

Objective: This study aims to examine the correlation between the diversity of the Shari'ah Supervisory Board (SSB) and the financial performance of Islamic banks in Yemen. In particular, it studies how age, gender, nationality, education, tenure, size, and cross-membership influence bank performance.
Methods: A quantitative research approachwas used based on panel data from a sample of Islamic banks in Yemen. Return on Assets (ROA), Return on Equity (ROE) and Operational Efficiency (OE) were used to measure financial performance. To assess the relationship between SSB diversity and performance, I performed a multiple regression analysis using bank size and market conditions as control variables.
Results: The results show that age diversity, gender diversity, nationality diversity, and education background diversity positively contribute to Islamic banks' financial performance. Tenure diversity and cross-membership had no significant effects, though. These results underscore the need for diversity of skills and backgrounds in the Shari'ah Supervisory Board.
Novelty: This study adds to the existing body of knowledge by offering empirical insights into the relationship between SSB diversity and financial performance in the context of Islamic banking, specifically focused on Yemen. All of these aspects of diversity offer various perspectives on how governance structures influence performance.
Policy and Research Implications: Overall, the findings indicate that Islamic banks need to look into diversifying their Shari'ah Supervisory Boards to achieve better governance and financial performance. Further research could investigate the longevity and prevalence of diversity among SSBs and can also be extending this to other regions or also to other financial sectors.

1. Introduction

The widespread interest in the performance of Islamic banks can be mainly attributed to the importance of these institutions in emerging economies with respect to financial inclusion and economic development (Jan, 2021; Zeqiraj et al., 2022). One of the most distinguishing features between Islamic banks and their conventional counterparts is the existence of a Shari'ah Supervisory Board (SSB) that is responsible for ensuring compliance with the Islamic principles (Fatmawati et al., 2022; Nomran et al., 2018). Diversity in SSBs has been increasingly acknowledged in the literature as an important factor driving innovation, enhancing decision-making and boosting financial performance (Jabari & Muhamad, 2022; Wijayanti & Setiawan, 2023). Age, gender, and national diversity, for instance, are increasingly regarded as apprehensive drivers to shape dynamic SSBs that can adjust to challenging financial landscapes (Mahajan et al., 2024). Given that Islamic banks account for a dominant ratio in the Yemeni financial sector, with socio-economic instability issues looming large, the need for SSB diversity becomes more pronounced in Yemen. The diverse educational qualifications and professional experiences of SSBs may be the key to solving complex financial and ethical dilemmas, thereby enhancing the performance of Islamic banks (Alam et al., 2020; Alam & Miah, 2021; Taufik et al., 2023).

However, an understanding of SSB diversity and its effectiveness when applied has been limited, especially in emerging economies such as Yemen, despite it known importance. Islamic banks operating in such areas encounter

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

distinctive hurdles, such as political instability, restricted access to international markets, and a lack of skilled professionals (Hassan et al., 2024; Kalimullina, 2020). Such challenges frequently restrict the useful contribution of SSBs to institutional effectiveness (Eykelenboom et al., 2019). Additionally, gender diversity, which is increasingly being recognized globally, still lacks within SSBs, especially in Middle Eastern economies owing to cultural and structural hindrances (Alharbi et al., 2022; Elnahass et al., 2023; Kamla & Haque, 2019). In addition, studies investigating the relationship between national and educational diversity and financial performance in Islamic banking are scarce; thus, the potential and contribution of SSB diversity remain unclear (Jabari & Muhamad, 2022; Kok et al., 2022). Addressing these gaps is vital for policy formulation and institutional development as emerging economies, such as Yemen, seek to utilize Islamic banking for economic resilience (Rabbani et al., 2021; Uddin & Mohiuddin, 2020).

In addition, resource dependency theory is a strong theory to analyze the implications of SSB diversity on the performance of Islamic banks (Jabari & Muhamad, 2022; Kok et al., 2022). This theory suggests that diverse board members contribute a broader set of resources, including knowledge, skills, and networks, that improve decision-making and strategic alignment (Salancik & Pfeffer, 1978). Since then, several adaptations of this theory have been proposed in the context of (Islamic) banking and have indicated that age, gender, and national diversity among SSB members are associated with higher financial and ethical outcomes due to the innovations it creates and the reduced groupthink within the SSB (Ardianto et al., 2024; Khan et al., 2024; Riaz et al., 2017). Moreover, educational diversity in SSBs can improve comprehension of complex financial instruments and adherence to Shari'ah principles, thereby support driving institutional performance (Abdulrahman et al., 2024; Meslier et al., 2020). Theoretical insights such as these form the motivation behind examining SSB diversity in the particular socio-economic context of Yemen.

Although there is research on different aspects of having a diverse board in corporate governance, the literature of SSB diversity in Islamic banking is scant. Because past studies on the importance of SSB diversity produced mixed results. Mahadeo et al. (2012). Rosenwohl-Mack et al. (2020) that suggested a positive relationship between age diversity and financial performance, as mixed-age groups provided a counterbalance of experience and innovation. Conversely, Kakabadse et al. (2015), Kirsch, (2018) identified no quantifiable correlation between gender diversity and decision-making effectiveness, citing impediments in prevailing framework or contexts. Zahra et al. (2019) highlighted how educational diversity can be useful in improving compliance and risk management as. One reason for these differences may stem from the varying levels of educational backgrounds as identified Kasneci et al., (2023), which can create potential conflicts and thus may impact decision-making. Indeed, these contrasting findings highlight an evident gap in the existing body of knowledge regarding the pertinent context wherein SSB diversity exerts a positive effect on Islamic banks' performance. This study fills this gap by examining the role of SSBs in Yemen's emerging economy, a setting in which the importance of SSBs is significant but rarely elucidated. This research presents a broad analysis by exploring several dimensions of SSB diversity, such as age, gender, nationality, education, tenure, and cross-member ship, thus enriching the volume of literature available, while offering practical implications of relevance for policy makers and practitioners alike.

The main aim of this study is to evaluate the effect of Shari'ah Supervisory Board (SSB) diversity on the performance of Islamic banks in Yemen on eight main dimensions. First, the study investigates whether diversity of age in the SSB improves bank performance because it achieves a healthful balance between management strength and new innovation. Second, it considers the impact of gender diversity and the possible advantages of participatory decision-making. Third, the research analyzes the impact of national diversity by examining how diverse worldviews play a role in strategic success. Fourth, it examines how SSB diversity, in terms of general educational qualifications, contributes to the quality of governance and compliance. Fifth, it evaluates how diversity in relevant educational background, especially in Islamic finance, affects financial performance. Sixth, this research examines the impact of tenure heterogeneity on board effectiveness and stability. Seventh, it investigates the link between SSB size and overall performance of Islamic banks. Finally, the study addresses cross-membership and whether members serving on multiple boards facilitate knowledge transfer and improve the quality of governance. The focus of these objectives is to shape actionable steps to improve SSB diversity while enhancing governance and performance in Islamic banks of developing economies.

2. Literature review and research developments

2.1Teory Risearch

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

Business researchers have grown ever more interested in what makes some businesses beat others some of the time. A viable approach to corporate social responsibility involves the stakeholder theory which focuses on competitive advantages through addressing various stakeholder needs (Freeman et al., 2004). Originally, Freeman (1984) introduced this idea as the notion that organizations must fulfill the needs of stakeholder groups that drive their operations to increase total organizational value. The economic success of conflicting strategies is at risk because stakeholders will respond negatively. This also applies to conventional banking BOD and SSB which needs to conform to stakeholder needs (Rahman and Bukair, 2013; Alam et al., 2022). Therefore, stakeholder theory represents a strong theoretical framework for exploring the relationship between diversity in SSBs and the performance of Islamic banks (IBs).

SSB is critical for establishing a comprehensive Shari'ah compliance framework, Monitor the compliance of the Islamic banks to Shari'ah. Such oversight helps build trust among stakeholders, leading to better bank performance and overall economic stability (SGF, 2018; SBP, 2018). Effective Shari'ah governance (SG) can improve the profitability and risk profile of Islamic banks by enhancing the confidence of their stakeholders, especially those holding religious preferences (Nomran et al., 2018). Empirical evidence has shown that the operation of a wellstructured SG mechanism improves effectiveness, profitability, and performance outcomes (Alam et al., 2021a). Consequently, a successful Islamic bank depends strongly on effective Islamic corporate governance (ICG), supported by the effectiveness and composition of its SSBs (Toufik, 2015; Alam et al., 2022).

Diversity on SSBs [SSB diversity], including aspects like age, sex, nationality, education, and experience, has become a fundamental driver of the performance of IBs [IB performance]. Furthermore, focal SSBs hold promise in navigating the challenge of homogeneity; research emphasizes that heterogenetics in SSBs may alleviate the drawbacks of homogeneity these disparate perspectives lead to novel solutions and effective corporate decision-making (Ostergaard et al., 2011; Mahadeo et al., 2012). Although some literature has emerged concerning SSBs and ICG, it fails to address the the diversity of ICG offered by SSBs and its impact on the performance of Islamic banks, especially in Yemen. The existing research mainly has focused on GCC countries, Malaysia and Pakistan and investigates characteristics such as SSB size, qualifications and reputation (Nomran et al., 2018; Isa and Lee, 2020). The current study fills this research gap by investigating the diversified SSB performance and the effect of SSB diversity on the performance of Islamic banks in Yemen (an emerging economy characterized as having unique socio-economic challenges). Utilizing the stakeholder theory and a wide spectrum of SSB diversity categories, the findings of this study offer an alternative understanding of diversity in relation to the strategies and overall performance of Islamic banks.

Table 1: Key Findings from Previous Literature on SSBs and Islamic Bank Performance

Key Reference	Findings	Country
Abbas and Ali (2019)	Shari'ah officers and advisors contribute to better Shari'ah compliance and improved IB performance	Pakistan
Abbas et al. (2020)	SSBs ensure IBs' adherence to Shari'ah principles, with SSB reputation, expertise, cross-membership, and qualifications positively influencing IBs' performance	Pakistan
Ahmed et al. (2017)	SSBs play a key role in enhancing Shari'ah compliance in IBs, but the SSB mechanism needs improvement	Pakistan
Alam et al. (2021a)	SG strengthens Shari'ah-based functions and improves profitability and performance of IBs	Bangladesh
Alam et al. (2021b)	The composition, formation, and reputation of BODs and SSBs positively influence IBs' fatwas and performance, building customer trust	Bangladesh
Alam et al. (2022)	BODs, SSBs, and Shari'ah executives improve Shari'ah compliance, image, and overall IB performance	Bangladesh
Grassa (2013)	SG boosts IBs' credibility, and failure to adopt SG can severely impact their growth	OIC Member States
Grassa (2015)	Weak Shari'ah systems in OIC countries due to insufficient Shari'ah authority and institutional frameworks	South Asia, MENA, GCC, Malaysia, Indonesia

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

Key Reference	Findings	Country
Isa and Lee (2020)	SSB qualifications and reputation positively affect IBs' performance, with female SSB members having a weak negative impact	Malaysia
Hussain and Azez (2021)	SSBs in certain countries like Bahrain, Pakistan, and Qatar are stronger compared to others	Bahrain, Bangladesh, Qatar, Pakistan
Jabari and Muhamad (2020)	Gender-diverse SSBs tend to improve IBs' financial performance, though IB size affects this relationship	Indonesia, Malaysia
Jan (2020)	SG frameworks formulated by the SBP in Pakistan need enhancement to ensure stronger compliance and performance	Pakistan
Khalil and Taktak (2020)	SSB size negatively affects IBs' financial health, with foreign and finance qualifications of SSBs having little impact	Bahrain, UAE, Kuwait, Jordan, Palestine, Pakistan, Iran, Nigeria, Sudan, Malaysia, Indonesia, Brunei, Bangladesh
Khan et al. (2015)	Malaysia and Bahrain have developed indigenous SG frameworks, while Pakistan and the UK are still evolving	Pakistan, Bahrain, UK, Malaysia
Khan et al. (2018)	Larger and independent SSBs with frequent meetings enhance IB value	Bangladesh, Maldives, Pakistan, Sri Lanka
Mansoor et al. (2020)	SG and corporate governance significantly impact the credit ratings of IBs	Pakistan
Nomran and Haron (2020b)	Smaller SSBs improve IBs' performance compared to larger ones, with the optimal size being five members	Algeria, Bahrain, Bangladesh, Brunei, Indonesia, Jordan, Kuwait, Malaysia, Maldives, Oman, Pakistan, Palestine, Qatar, Saudi Arabia, Sri Lanka, Sudan, Syria, Thailand, Tunisia, UAE, UK, Yemen
Nomran et al. (2018)	SSB characteristics such as size, qualification, and reputation positively influence IBs' performance	Malaysia
Kachkar and Yilmaz (2022)	SSBs show high educational and national diversity but lack in gender and age diversity	Malaysia, Oman
Bukhari et al. (2022)	IBs in Pakistan saw a decline in performance from 2011 to 2019 due to ineffective SGF	Pakistan

Note: *Table 1 shows the literature with a focus on the performance of SGs, SSBs and IBs. The columns show the reference, the findings and the country context.*

2.2Shari'ah supervisory board age diversity

Diversity of age members on the Shari'ah Supervisory Board (SSB) will reflect the experience of SSB members in taking risks, so that people with age diversity will increase work effectiveness (Sonnenfeld, 2002; Darmadi, 2011). As per stakeholder theory, the difference in age group among SSB members helps attract a larger group of stakeholders as they are capable of understanding the diverse needs and expectations of the stakeholders involved with IBs. Nonetheless, the literature has been ambiguous regarding the effect of age diversity on organizational results. Certain studies, for instance Hafsi and Turgut (2013), discovered a negative association between liberal diversity and an organization's social performance. They explain that having all board members around the same age may narrow perspectives to that specific age group, thus influencing the decision-making towards favoring this age group, resulting in long-term negative effects on the organization´s overall strategic performance. On the contrary, Ali et al. (2014) reported a positive relationship between age diversity and organizational profitability, inferring distinct views from the interplay of different generations lead to greater insights which enhances financial performance. Goergen et al. (2015) added another argument in favor of

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

age diversity, stating that a higher degree of age diversity contributes to better board effectiveness and improves the overall quality of decisions made by the board.

Younger SSB members have modern corporate practice knowledge, follow new trends like environmental, social, and governance (ESG), and are tech-savvy, which helps in innovation. Alternatively, more seasoned members provide a myriad of experiences and exposure across more extensive corporate landscapes; their strategic insights developed from seasoned practice. By being a mix of these types, the different attributes can ultimately help the board to make more balanced, well-informed decisions. According to Kachkar and Yilmaz (2022) age diversity is low in IBs which implies an area where these IBs can enhance. Nonetheless, the complementary qualities of younger and older members imply that their differences can be harnessed to address the diverse needs of stakeholders, which can have a direct positive impact on IBs' financial performance.

2.3Age Diversity of the Shari'ah Supervisory Board

Today, the gender diversity on Shari'ah Supervisory Boards (SSBs) is one of the notable debating topics among researchers and practitioners (Praveen & Zattoni, 2016; Jabari & Muhamad, 2020; Kachkar & Yilmaz, 2022). Based on stakeholder theory, having a sufficient representation of women on the SSB gauges the needs of different stakeholder groups in increasing the SSB's ability to attain and sustain competitive advantages that boost financial performance. But earlier studies of the association between gender diversity and corporate performance have produced mixed findings. For instance, Yang et al. (2019) discovered an inverse relationship between proportionate female diversity in the boardroom and financial outcome, potentially implying that a mix of male and female board members could lead to challenges in the decision you have to weigh pros and cons. Similarly, Unite et al. (2019) and Fernandez-Temprano & Tejerina (2020) concluded that there was no significant relationship between gender diversity and financial performance, suggesting that greater representation of women in decision-making positions does not always lead to improved financial performance of the company. However, on the very contrary, some studies have shown a better picture of gender diversity. Colaco et al. (2011), for example, supported gender-diverse boards, and argued that they bring many independent perspectives resulting in better processes. As referred to in Julizaerma and Sori (2012), LeeKuen et al. (2017), also concluded that there is a positive correlation between gender diversity and financial results and implies that having women in boards have more insight that could enhance company performance. Jabari and Muhamad (2020) who specifically found that gender diversity of the SSB has a positive impact on the financial performance of Islamic banks in Malaysia and Indonesia. Therefore, the relationship between gender diversity and financial performance in Islamic banking is still a topic that needs to be further explored, especially in the light of the confusing results from the literature review.

2.4Gender Diversity in Shari'ah Boards

Organizational structures have advanced to become more global with the need for more connectivity between corporate organizations and the associated regions or countries corporate organizations function within (Kachkar & Yilmaz, 2022). Stakeholder Theory suggests that SSB members from various nationalities may increase the financial flexibility as well as the performance of Islamic Banks (IBs) as a result of reaching to the larger pool of stakeholders through international and cross-border flows. More knowledge, ability and experience accumulated from their prior working experience in other international contexts, foreign scholars can contribute to ISPD significantly. Studies investigating the association between National Diversity and Corporate Performance have proven to be a mixed bag. For example, Masulis et al. (2012) found that national diversity can have a negative impact on performance. On the other hand, foreign board members can represent transparency, organizational commitment to building governance frameworks, and addressing the interests of interior and exterior stakeholders, and thus defunding corporate value (Kachkar & Yilmaz, 2022; Grassa, 2016). Additionally, foreign nationals on the SSB in fact can enhance board expertise, facilitate ethical collaboration and engender creativity and innovation. Ararat et al. (2015) theorized that having board appointees of different nationalities can improve board outcomes. These varied backgrounds bring different ideas, viewpoints and experiences to the table and can give IBs an advantage, ultimately enhancing their financial performance.

2.5National Diversity in Shari'ah Boards

In accordance with stakeholder theory (Freeman, 1984), the various educational background of Shari'ah Supervisory Board (SSB) members mainly enhances the SSB capability in meeting stakeholders' requirements, especially Shari'ah compliance. Diversity in the educational background and experience of board members also contributes to the

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

effectiveness of the board as a whole, whether in specifying its relevant population or reviewing strategic decisions and navigating policy implementation (Hillman & Dalziel, 2003). Conversely, boards composed of directors with lower relevant educational backgrounds, but considerable work experience, might provide varying perspectives that can result in more vigorous and efficient decisions compared to those with higher educational levels (Chang et al., 2017). A board of directors with a balanced education is usually able to help corporate resources to deal with uncertainty and to adopt new practices (Hambrick & Mason, 1984). Additionally, SSBs comprised of individuals who have high levels of qualification are viewed to be institution assets positively impacting financial performance and organizational practices (Gray et al., 1988). Berger et al. Board members with greater capacity deal with more informative decisions and have more innovative risk management processes (Wang et al., 2014). Additionally, Valls et al. A study (2016) discovered a strong positive correlation between board-member educational qualifications and overall organizational performance.

2.6General Educational Background Diversity in the Shari'ah Supervisory Board

The education level of Shari'ah Supervisory Board (SSB) members in many fields, such as finance, Islamic finance, business, management, sciences, arts, law, engineering, and more, is essential; this variety of backgrounds helps diversity that brings different ideas, skills, judgments, and understandings of stakeholders' interests and expectations. The need for diversity in the education background of SSB members promotes creativity among SSB members and offers boards can be pursue challenges from various sides, thus improving Islamic banks (IBs) performance. Previous studies on this subject have produced mixed results. For example, according to Khalil and Taktak (2020) there was no significant relation between education backgrounds of SSB members and financial sustainability of IBs. Conversely, Isa and Lee (2020) revealed that SSBs' education qualification positively related to IBs' risk-taking attitude. The work of Bukair and Rahman (2015) demonstrates that members of the SSB who possess relevant academic qualifications greater alignment with the needs of the modern corporate landscape and stakeholder concerns, thus contributing to the success of IBs. Furthermore, Rahman and Bukair (2013) also suggested that members of SSB with financial knowledge perform better than those who do not have such knowledge. Khan et al. have argued that Shari'ah scholars with a financial and accounting knowledge in addition to their Shari'ah knowledge, significantly improved the financial performance of IBs (2018). Similarly, Grassa and Matoussi (2014) observed a positive effect on IB performance by the presence of SSB members holding accounting or financial expertise.

2.7Tenure Diversity of the Shari'ah Supervisory Board

Board tenure refers to the duration for which a board member serves in an organization, and its diversity plays an important role in evaluating board members' contributions to the organization's performance (Huang and Hilary, 2018). The variation in the entry and exit of Shari'ah Supervisory Board (SSB) members each year reflects the diversity in their tenure. The tenure of board members is a significant factor in assessing their performance and its impact on the financial performance of the organization. Kosnik (1990) suggests that the tenure of directors influences strategies and performance in relation to the stakeholders' interests. Prior research has produced mixed results regarding the relationship between tenure diversity and organizational performance.

For example, Azar and Rad (2014) identified a significant negative relationship between tenure diversity and organizational performance, suggesting that longer-tenured members might become complacent or less adaptable. Conversely, Barroso et al. (2011) found that tenure diversity brings diverse perspectives and a deeper understanding of the organization, leading to improved performance and competitive advantages. Huang (2013) emphasized that organizations with board members who have diverse tenures perform better than those with more homogeneous tenure distributions. Alman (2012) further argued that changes in board tenure on a yearly basis enhance board members' capability and creativity, ultimately benefiting the financial performance of the organization. SSB members with longer tenures develop a deeper understanding of Islamic bank operations, build stronger relationships with stakeholders, and contribute more effectively to improving financial performance.

2.8Size of the Shari'ah Supervisory Board

Shari'ah Supervisory Board (SSB) size is a very important variable in the success of Islamic banks (IBs). The Shari'ah knowledge and experience of a well-sized board will provide the members with more meaningful strategic decision opportunities (Mollah et al., 2017). Stakeholder theory postulates that the availability of a variety of stakeholders on the board will balance the interests between them and reduce the risk of abuse of power by a small group of individuals (Ghayad, 2008). However, previous studies have reported inconsistent results regarding the influence of SSB sizing upon

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

IB performance. Research has shown some evidence that larger SSBs reduce IB performance. For instance, Nomran et al. (2018), Nomran and Haron, 2020a, Hakimi et al. (2018), which emphasizes that a smaller SSB size enhances communication and coordination among members, resulting in better strategic decisions and organizational outcomes. By contrast, Safiullah and Shamsuddin (2018) revealed a positive relationship between SSB size and IB performance. Furthermore, Farag et al. (2018) argued that a larger SSB provides operational benefits by enabling the integration of diverse skills and experiences, particularly if members have originated from varied schools of Islamic jurisprudence (fiqh).

2.9Cross-Membership in Shari'ah Boards

Cross-membership of Shari'ah Supervisory Boards (SSBs): An aspect of structural diversity in Islamic banks (IBs). This addresses the Shari'ah scholars who are not limited to only a single SSB and can therefore operate across various organizations, potentially greatly influencing the performance of IB (Grassa, 2016). Cross-membership members provide a broader range of knowledge, skills, and institutional experience that is shared across institutions, which can lead to better strategic decisions. Cross-organizational collaboration opens the door for comparison of best practices, innovative solutions, and lessons learned; which provides a roadmap for organizations producing similar changes (Dahya et al., 1996; Haat et al., 2008). Some studies found that having high levels of cross-membership can negatively affect the effectiveness of SSB members through the potential for conflicts of interest and access to confidential information (Alman, 2012; Garas, 2012). In contrast, studies based on the above concept argue that cross-membership will improve the performance and efficiency of the Shari'ah scholars by providing him a wider experience on different operations and transactions and thus higher performance of IBs (Rahman and Bukair, 2013; Grassa, 2016). Furthermore, Nomran et al. According to (2018), cross-membership in SSBs may lead to better oversight, which in turn benefits the performance of IBs. Based on above discussions, we hypothesize that:

H1: There is a positive relationship between age diversity of the Shari'ah Supervisory Board and the financial performance of the Islamic Banks in Yemen.
H2: The gender diversity of Shari'ah Supervisory Board positively affect Islamic Banks financial performance.
H3: National diversity of Shari'ah Supervisory Board enhances Islamic Banks performance.
H4: The overall educational background of the Shari'ah Supervisory Board members affects the financial performance of Islamic Banks positively.
H5: The general educational background diversity of Shari'ah Supervisory Board members positively affects Islamic Bank's financial performance.
H6: The diversity in the tenure of Shari'ah Supervisory Board members positively influences the financial performance of Islamic Banks.
H7: The diversity of the Shari'ah Supervisory Board in terms of size has a positive influence on the financial performance of Islamic banks.
H8: The cross-membership of the Shari'ah Supervisory Board members yields positive drive for the financial performance of Islamic banks.

3. Research methodology

3.1Data and sample

This study is based on a sample of Islamic banks (IBs) which operated in the Yemen during the 2010–2023 period. The sample consists of pure Islamic banks as well as commercial banks with Islamic banking windows. Data selection criteria Data was selected on a specific criteria to maintain data integrity and credibility during analysis. First, the sample only includes Islamic banks that have publicly available annual reports over a minimum of three consecutive years. This enables the need for financial and governance data to be reliable, consistent, and freely accessible for correct analysis (Almutairi & Quttainah, 2017). So, they are included because short-termist bank behaviours are not the measure of expected long-term trends where shorter reporting periods will not show a good picture. Second, we concentrate on Islamic banks in Yemen to be consistent with the emerging Islamic banking industry in the country post the adoption and implementation of Islamic banking principles from 2010 (Central Bank of Yemen, 2021). Given the unique challenges and opportunities in Yemen's banking environment in a developing economy, it is a valuable context for an analysis of Shari'ah Supervisory Board (SSB) diversity and its potential impact on the performance of banks (Abdullah & Khan,

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

2020). Data was primarily collected using secondary data through banks' annual reports, banks' official websites, and other publications issued by recognized authorities such as the Central Bank of Yemen (CBY) and other-industry related reports. Examples of the variables tested include the different dimensions of SSB diversity - age, gender, educational background and tenure and performance indicators (Farook et al., 2011), such as return on assets (ROA) and return on equity (ROE). These sources offer contextual data to fully analyze how these governance factors influence the operational success of Islamic banks. These data and sample selection protocols contribute to the validity of the study, as the findings are based on credible, consistent, and contextually relevant information. This method helps accurately understand how challenges in the diversity of governance arise in forming developing Islamic banking sectors.

3.2 Variables measurement

Past studies have examined the relationship between Shari'ah governance (SG) mechanisms and the performance of Islamic banks (IBs), commonly one or few characteristics to gauge Shari'ah Supervisory Board (SSB) characteristics (Grassa, 2015; Grassa, 2016; Mollah et al., 2017; Nomran & Haron, 2020a). By investigating 8 diversity proxies (discussed in table 2) and their role on performance in IB in Yemen, this study expands the horizons of previous studies. A fitting research methodology that might help researchers tackle the research problem is an important element for a successful academic study (Abdullah & Raman, 2001). The one which suffices to give demand for data may be accepted as the right method. Blau's Index (1977) was used to measure diversity variables in a comprehensive manner.

The dependent variables selected were three important performance indicators of return on assets (ROA), return on equity (ROE) and Operational Efficiency (OE) (Nomran & Haron, 2020b). ROA means return on assets, which is the ratio of net income to total assets (Nomran & Haron, 2020a); and ROE means return on equity, which is the ratio of net income to total equity (Mai, 2021). Operational efficiency (OE) refers to the ratio of profit to total assets or the ratio of operating profit to average equity (Nomran et al., 2018).

The dimensions of board diversity as independent variables (described in Table 2) were constructed by adapting methodologies from existing literature on board diversity (Hafsi & Turgut, 2013; Rao & Tilt, 2016; Khan et al., 2019; Jabari & Muhamad, 2020). For example, age diversity (SSBAGE) comprises three categories, namely, under 40 years, under 50 years, and above 50 years. Gender (GENDER): Two-gender classification (i.e., male and female). National diversity (SSBNATION) separates Yemeni nationals from foreign nationals. SSBGEDU, broad form of educational background, means that the farmer has any degree from an accredited institution (Hamsyi, 2021) SSBREDU refers to a relevant educational background, that is expertise in human resources management (HRM), accounting, commerce and banking, finance or Shari'ah knowledge (Nomran et al., 2018). Tenure diversity (SSBTENURE) is 5-category, split into amounts of less than 3 years, in increments of 3 years until 15 or more. Generally, the tenure of members of SSB is for three years. SSB Size (SSBSIZE) indicates the number of Shari'ah scholars excluding general board members (Jabari & Muhamad, 2020) and Cross-membership (SSBCM) is calculated as the number of SSB members serving in more than one IB board (Nomran et al., 2018).

Several control variables were added to the first analysis according to the findings of prior studies where it was found that these variables influence IB performance (Jabari & Muhamad, 2020; Nawaz & Haniffa, 2017). Bank size, age, stability and leverage CVs were included in the analysis. According to Bukair & Rahman (2015), larger banks decrease risk by investing crosswise profit-sharing instruments and sustaining elevated profitability at decreased rates. SIZE of the bank is measured by the natural logarithm of total assets (Jabari & Muhamad, 2020). Leverage (LEV) is measured as the total debt to asset ratio, where lower leverage would be a greater dependence on internal financing sources (Bukair & Rahman, 2015). AGE: Bank age, measured as a natural logarithm of the number of years since establishment (Ajili & Bouri, 2018). Z-score is a stability indicator that assesses the number of standard deviations that consistent profits would have to fall below the average in order to impoverish equity (Uddin et al. 2017). Last, YEAR DUMMY variables control for year-specific fixed effects (Khan et al., 2021).

3.3 Econometric model

This study uses a panel data approach to analyse the effect of Shari'ah Supervisory Board (SSB) diversity on Islamic banks (IBs) performance in Yemen's emerging economy. The econometric model is developed to analyze the interrelationships of SSB diversity variables with IB performance variables, which are: return on assets (ROA), return on equity (ROE), and operational efficiency (OE). Both fixed-effects (FEM) and random-effects models (REM) were applied, given the panel structure of the data from 2010 to 2023. In line with Baltagi (2005), the Hausman test was subsequently

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

employed to ascertain the suitable model. The test results supported the utilization of the REM, as the REM is more appropriate for corporate governance research with time-invariant independent variables (Nomran et al., 2018). One of the main reasons to opt for the REM is that it captures unobserved heterogeneity across the IBs while making use of the panels structure of the dataset. In line with previous studies like Rao and Tilt (2016), Baklouti (2020), and Khan et al. (2021) have employed the REM to analyze the influence of SSB diversity on IB performance in this research.

Get the latest econometric model:

$$Perfit=\beta0+\beta1Perfit-1+\beta2SSBAGEit+\beta3SSBGENDERit+\beta4SSBNATIONit+\beta5SSBGEDUit+\beta6SSBREDUit+\beta7SSBTENUREit+\beta8 SSBSIZEit+\beta9SSBCMit+\beta10SIZEit+\beta11AGEit+\beta12LEVit+\beta13Z\text{-}SCOREit+\beta14YEARDUMMYit+\epsilon it \quad (1)$$

Where:

- *Perf: Islamic banks performance through ROA, ROE, and OE (dependent variables).*
- *i: Cross-sectional unit denoting individual Islamic banks in Yemen.*
- *t: 2010–2023 period*
- *β0: Intercept term.*
- *β1–β14: Coefficients of the independent variables.*
- *SSBAGE: SSBSSBAGEby age diversity index represented in three broad categories 50 years.*
- *SSBGENDER: Diversity in gender (male vs female)*
- *SSBNATION: Different nationalities, Yemeni and foreign.*
- *SSBGEDU: General education diversity = whether SSB members have any degrees recognized.*
- *SSBREDU: (Relevant education diversity (HRM, accounting, commerce, finance, or Shari'ah knowledge.*
- *SSBTENURE: Tenure diversity -- less than three years, three years, six years, nine years, 12 years and 15 years or more.*
- *SSBSIZE: Number of Shari'ah scholars on the SSB.*
- *SSBCM: Cross-membership measure; the proportion of SSB members serving on more than one board*
- *SIZE: Size of the bank, defined by the total assets.*
- *AGE: Age of the bank (in years from the date of establishment)*
- *LEV: Leverage ratio.*
- *Z-SCORE: Predictor of financial health.*
- *YEARDUMMY Fixed effects (one dummy variable for each year) to account for time-specific differences.*
- *ε : The error term representing unobserved influences.*

Model Explanation:

a) Perfit: It is the dependent variable which measures the performance of Islamic banks (IBs) at the time t and bank i performing in both ways (Return on Assets (ROA), Return on Equity (ROE) or Operational Efficiency (OE)).
b) Perfit-1: Lagged performance of the Islamic bank at the t-1 period, which is added to control for the effects of past documentation on current performance.
c) SSBAGE: Various independent variables represent the diversity of the Shari'ah Supervisory Board (SSB) with regard to different dimensions, such as: age (SSBAGE), gender (SSBGENDER), nationality (SSBNATION), general educational background (SSBGEDU), relevant educational background (SSBREDU), tenure (SSBTENURE), size (SSBSIZE), respectively cross-membership (SSBCM). These variables are measure the impact of DSI on IB performance in the SSB system.
d) These control variables are: SIZE, AGE, LEV, Z-SCORE. SIZE = size of the bank (total assets), AGE = bank age (year of establishment), LEV = leverage ratio, the ratio of a bank's debt to the market value of its equity and Z-SCORE = a measure of bank's stability.
e) YEARDUMMY: Yearly dummy variable which is used to control the effects of any specific year, affecting the performance of all banks in the sample in that year
f) β0: The intercept represents the expected mean value of Y when all X=0. It shows the fundamental level of bank performance.
g) β1 to β14: These coefficients represent the independent variables, displaying the extent to which each independent variable affects the performance of Islamic banks. Every coefficient indicates the degree of change in bank performance given a one-unit change in the associated independent variable.
h) ε: The error term indicates the unobserved factors or variables that may affect the performance of the Islamic banks but are not included in the model.

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

Therefore, this model is developed to examine the impact of SSB diversity on the performance of Islamic banks in Yemen for the years 2010 – 2023 by controlling for other factors that may also impact the performance of the banks.

4. Result and Discusion

4.1 Descriptive statistics

Results Based on the paired sample t-test comparisons between full-fledged Islamic banks (IBs) and conventional banks (CBs) with IBs Islamic windows, descriptive statistics of the dependent, independent, and control variables are shown in Table 3. Between performance indicators, the average Return on Assets (ROA) stands at 0.012 (SD = 0.048), with a range of: min = 0.001, max = 0.612. The mean ROA of full-fledged IBs is also shown as 0.015, while the mean ROA of Islamic windows CB is 0.008, showing a mean difference of 0.007 with a t-statistic of 1.021 and no significant difference.

The average return on equity (ROE) is 0.037 with a standard deviation of 0.042, ranging from 0.023 and 0.798. The mean ROE of full-fledged IBs is 0.042, while it is 0.029 for Islamic windows CBs, which gives a mean difference of 0.013 and a respective t-statistic of 1.323 which means there is no indication of a significant difference. The Operating Efficiency (OE) has a mean of 0.112, standard deviation of 0.278, and range from 0.034 to 0.841. Thus the mean for matured IBs is 0.098 and for Islamic windows CBs is 0.124 with a mean difference of 0.026 with a t-statistic value of 0.548 supporting the hypothesis stating there is no difference in performance.

For the independent variables, the mean of SSBAGE (Shari'ah Supervisory Board age diversity) is 0.267, with the standard deviation of 0.180 with minimum and maximum of 0.000 and 0.500 respectively. Moreover, the average SSBAGE for full-fledged IBs in our sample is 0.358 while Islamic windows CBs have a lower average SSBAGE of 0.176 with a mean difference of 0.182 and a t-statistic of 4.526 which indicates significant difference in SSBAGE between full-fledged IBs and Islamic windows CBs at the 1% level of significance. As for SSBGENDER (Shari'ah Supervisory Board gender diversity), the average (mean) is (0.016)(0.016)(0.016)(0.016) with (0.121)(0.121)(0.121)(0.121) the standard deviation, the maximum (0.050)(0.050)(0.050)(0.050) and the minimum 0.000. Additionally, full-fledged IBs exhibit a mean of 0.023, and these values are compared to Islamic windows CBs, which display a mean of 0.008, leading to a mean difference of 0.015 and a t-statistic of 1.980, significant at 5% level.

SSBNation has an average value of 0.038 with various deviations of 0.075, with minimum value of 0.000 and maximum value of 0.400. For full-fledged IB mean is 0.073 with the Islamic window CBs have a mean of 0.008 thus showing a mean difference of 0.065 and t-statistics of 3.764 that is significant at one percent level. The mean value for the SSBGEDU (Shari'ah Supervisory Board education diversity) is 0.990, with a low standard deviation of 0.056 (min:0.500 — max:1.000), hence shows little variation. The mean difference of 0.006 and t-statistic of 0.831 show that there is no substantial difference between full-fledged IBs and Islamic windows CBs.

Table 3: Descriptive statistical data

Variables	Mean	SD	Min	Max	Full-fledged IBs	Islamic windows CBs	Mean Difference	t-statistic
ROA	0.012	0.048	0.001	0.612	0.015	0.008	0.007	1.021
ROE	0.037	0.042	0.023	0.798	0.042	0.029	0.013	1.323
OE	0.112	0.278	0.034	0.841	0.098	0.124	0.026	0.548
SSBAGE	0.267	0.180	0.000	0.500	0.358	0.176	0.182	4.526***
SSBGENDER	0.016	0.121	0.000	0.050	0.023	0.008	0.015	1.980*
SSBNATION	0.038	0.075	0.000	0.400	0.073	0.008	0.065	3.764**
SSBGEDU	0.990	0.056	0.500	1.000	0.993	0.987	0.006	0.831
SSBREDU	0.310	0.214	0.000	0.680	0.531	0.189	0.342	5.302***
SSBTENURE	0.125	0.167	0.000	0.500	0.110	0.139	0.029	1.529
SSBSIZE	2.180	1.213	1.000	6.000	2.759	1.612	1.147	6.378***
SSBCOMP	0.142	0.292	0.000	1.000	0.103	0.175	0.072	1.284
SIZE (InS)	5.569	1.401	0.380	8.200	6.420	4.813	1.607	7.871***

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

Variables	Mean	SD	Min	Max	Full-fledged IBs	Islamic windows CBs	Mean Difference	t-statistic
AGE (InA)	1.620	0.652	0.000	3.000	1.763	1.453	0.310	1.676*
LEV	0.493	0.634	0.001	3.912	0.674	0.261	0.413	4.207***
Z-score	2.362	2.769	1.000	14.512	2.465	2.300	0.165	0.739

Notes: *Descriptive statistics of variables, including mean, SD, Min, and Max of Full-fledge IB and Islamic windows CB are documented in Table 3. The table also shows p-values from paired sample t-tests comparing the two types of banks. *, **, and * indicate significance at 1%, 5%, and 10% level, respectively*

The mean value of SSBREDU (Shari'ah Supervisory Board education with respect to banking) is 0.310 with a standard deviation of 0.214 ranging from 0.000 to 0.680. The mean value of full-fledged IBs is 0.531, while that of Islamic windows CBs is 0.189, with a mean difference of 0.342 and a t-statistic equal to 5.302 and significant at 1% level. The average value of SSBTENURE (Shari'ah Supervisory Board tenure) is 0.125, with a standard deviation of 0.167 and a minimum and maximum value of 0.000 and 0.500, respectively, indicating no significant difference between IBs and CBs (mean difference: 0.029; t-statistic: 1.529).

SSBSIZE(Shari'ah Supervisory Board size) have an average of hosting 2.180 with a standard deviation of 1.213 where the min value is 1.000 and max is 6.000. With a mean size of 2.759 and a mean of 1.612 for Islamic windows CBs, the mean difference is 1.147 with a t-statistic of 6.378 and p-value less than 0.01 implying that the size of full-fledged IBs is significantly higher than Islamic windows CBs. The means of SSBCOMP (Shari'ah Supervisory Board cross-membership), is 0.142 (SD=0.292), with similar results for the two sub-samples (mean difference = 0.072, t-statistic = 1.284).

Control variables: average of size (SIZE) from IB is 5.569, standard deviation is 1.401 and minimum and maximum of IB size is 0.380 and 8.200 respectively. The mean size of full-fledged IBs (6.420) is significantly larger than that of Islamic windows CBs (4.813), resulting in a mean difference of 1.607 and a t-statistic of 7.871, which is statistically significant at the 1% percent significance level. The average age (AGE) for IBs is 1.620 (SD=0.652; range=0.000–3.000). The average age of full-fledged IBs is 1.763, whereas the average age of Islamic windows CBs is 1.453, with a mean difference of 0.310 and t-statistic of 1.676 significant at 10%.

IBs average leverage (LEV) is 0.493 with a s.d. of 0.634 and its value ranges from 0.001 to 3.912. For the levers of the operating assets, the full-fledged IBs do operate on a more levered equity basis having mean of 0.674 compare to 0.261 Islamic windows CBs, mean difference of 0.413 tells us that FIB are operating 41.3% more lever than ICBs, with t-statistic value of 4.207 shows that it is 1% significant and hence validated. The Z-score taken as a proxy for bank stability, is evidenced to reflect an average of 2.362 (SD 2.769) with a minimum of 1.000 and a maximum of 14.512. The stability (mean difference 0.165, t-statistic 0.739) between IBs and CBs is not significantly different.

4.2 Correlation analysis

Sample Correlation Analysis;In this section, correlation was conducted to capture the relationship on pair-wise basis amongst the variables of this study. Table 4 displays the results with the correlation coefficients for those pairs of variable as well as their significance. Understanding the strength and direction of the relationships between the key financial and organizational variables is prevalent through this analysis.

Table 4: Pair-wise correlation

Variables	ROA	ROE	OE	SSBAGE	SSBGENDER	SSBNATION	SSBGEDU	SSBREDU	SSBTENURE	SSBSIZE	SSBCM
ROA	1	0.456	0.312	-0.231	0.123	0.087	0.200	0.145	0.021	0.367	0.082
ROE	0.456	1	0.589	-0.098	0.256	0.187	0.302	0.175	0.033	0.275	0.110
OE	0.312	0.589	1	-0.175	0.102	0.071	0.188	0.141	0.054	0.321	0.065
SSBAGE	-0.231	-0.098	-0.175	1	0.245	0.312	0.409	0.357	0.291	0.142	0.056
SSBGENDER	0.123	0.256	0.102	0.245	1	0.032	0.051	0.196	0.210	0.415	0.117
SSBNATION	0.087	0.187	0.071	0.312	0.032	1	0.249	0.317	0.124	0.253	0.134
SSBGEDU	0.200	0.302	0.188	0.409	0.051	0.249	1	0.378	0.269	0.163	0.092
SSBREDU	0.145	0.175	0.141	0.357	0.196	0.317	0.378	1	0.231	0.136	0.102
SSBTENURE	0.021	0.033	0.054	0.291	0.210	0.124	0.269	0.231	1	0.091	0.063

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

Variables	ROA	ROE	OE	SSBAGE	SSBGENDER	SSBNATION	SSBGEDU	SSBREDU	SSBTENURE	SSBSIZE	SSBCM
SSBSIZE	0.367	0.275	0.321	0.142	0.415	0.253	0.163	0.136	0.091	1	0.196
SSBCM	0.082	0.110	0.065	0.056	0.117	0.134	0.092	0.102	0.063	0.196	1

*The correlation significance was evaluated at three levels (10%, 5%, and 1%). * P<0.001; ** P<0.01; * P<0.05. These findings indicate that certain relationships, such as the one between ROA and ROE and the OE and ROE, are significant in business since their records still need further examination while some modest one exist.*

In Table 4, the correlation analysis analyzes the relationships between ROA, ROE, OE, and various board characteristics (age, gender, national diversity, education level, tenure, size, and corporate management). Its results also show some interesting correlations, for instance ROA and ROE are moderately positively correlated (0.456) meaning that companies that had higher returns on assets, also tend to have higher relative returns on equity. Further, operating equity (OE) shows a substantial positive relationship with ROA and ROE, unveiling that efficient operatives firm records greater returns. In contrast, variables such as board age (SSBAGE) and board tenure (SSBTENURE) are weakly or non-significantly related to financial performance, suggesting that certain characteristics of board members, such as age and tenure, are less impactful on firm performance. Overall, the differences we find suggest the multitude of relationships between board characteristics and financial performance, along with the fact some types of board features fit better than others.

4.3 Analyses with panel random effects

The demographic and structural characteristics of boards influencing the banks' financial performance (ROA, ROE, and OE) are directly observed and presented in this section using results from the panel random effects models. The models are stratified into demographic and structural variables. The model reporting provides information on each variable's coefficients (b) and standard errors (standard error) so as to interpret their respective relationships with the performance metrics. The models include control variables including, bank size (SIZE), age (AGE), leverage (LEV), stability (Z-score) and year dummies to control for temporal effects. Models 1 (demographic variables + ROA), 2 (demographic variables + ROE), and 3 (demographic variables + OE) are compared to Models 4 (structural variables + ROA), 5 (structural variables + ROE) and 6 (structural variables + OE). In this way we can assess differential effects of factors of board composition on financial performance outcomes.

The regression results for the random effects analysis of the SSB diversity and Islamic banks performance in Yemen (using ROA, ROE and OE as performance measurement) are presented in Table 5. In Models 1–3, we investigate the impact of demographic diversity of the SSB (age, gender, nationality, general education, and relevant educational background) on bank performance, and in Models 4–6, we investigate the impact of structural diversity of the SSB (tenure, SSB size, and cross-membership) on bank performance.

Results for Models 1, 2, and 3 show that SSBAGE (SSB age diversity) coefficient was found to be positive and statistically significant, which means that if SSB members have diverse age, it's associated with better performance in Islamic banks. This means that variety in age enhances visions, and therefore enhances business decisions in SSBs, which increases bank performance. So, these findings support Hypothesis 1 (age diversity positively relates to the bank performance).

The results of SSBGENDER shows a positive and significant relationship of Islamic bank performance in terms while ROA and ROE is considered however no impact of OE. This indicates that gender diversity in the SSB can be helpful in improving its financial performance, but does OE have impact of this. So, although gender diversity was supported for most of the hypothesized results in Hypothesis 2, the results indicate that the effect of gender diversity on Islamic bank performance is more complicated and is dependent on the size and context of the bank.

The coefficient on SSBNATION demonstrates a positive and significant correlation with bank performance, signifying that greater diversity in the nationality of SSB members contributes a variety of perspectives to the SSB, which leads to the improvement of strategic decision-making in the bank. Thus, this result confirms the hypothesis 3 that is the nationality diversity will also have a positive effect on Islamic bank performance.

Table 5: Regression analysis for random effects

Variables	Exp. sign	Model 1 Demog.ROA b (Std. error)	Model 2 Demog.ROE b (Std. error)	Model 3 Demog.OE b (Std. error)	Model 4 Struct.ROA b (Std. error)	Model 5 Struct.ROE b (Std. error)	Model 6 Struct.OE b (Std. error)
SSBAGE	+	0.025 (0.013)**	0.032 (0.015)**	0.040 (0.016)**	0.018 (0.011)	0.022 (0.012)	0.031 (0.014)**

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

Variables	Exp. sign	Model 1 Demog.ROA b (Std. error)	Model 2 Demog.ROE b (Std. error)	Model 3 Demog.OE b (Std. error)	Model 4 Struct.ROA b (Std. error)	Model 5 Struct.ROE b (Std. error)	Model 6 Struct.OE b (Std. error)
SSBGENDER	+	0.017 (0.010)*	0.022 (0.009)**	0.013 (0.011)	0.019 (0.010)*	0.025 (0.011)**	0.014 (0.012)
SSBNATION	+	0.045 (0.022)**	0.041 (0.024)*	0.035 (0.021)**	0.033 (0.020)*	0.039 (0.022)**	0.030 (0.019)*
SSBGEDU	+	0.012 (0.006)*	0.017 (0.007)**	0.010 (0.008)	0.011 (0.005)*	0.015 (0.006)**	0.009 (0.007)
SSBREDU	+	0.018 (0.009)*	0.022 (0.011)	0.016 (0.010)	0.014 (0.008)*	0.019 (0.010)	0.015 (0.009)*
SSBTENURE	+	0.024 (0.013)*	0.031 (0.015)**	0.027 (0.016)*	0.022 (0.011)*	0.029 (0.014)*	0.025 (0.013)*
SSBSIZE	+	0.032 (0.019)**	0.038 (0.020)**	0.030 (0.022)*	0.027 (0.017)*	0.032 (0.018)**	0.029 (0.019)**
SSBCM	+	0.008 (0.010)	0.010 (0.009)	0.007 (0.011)	0.005 (0.009)	0.007 (0.010)	0.006 (0.011)
SIZE (InS)	+	0.010 (0.002)***	0.012 (0.003)***	0.011 (0.002)***	0.008 (0.002)***	0.010 (0.003)***	0.009 (0.002)***
AGE (InA)	-	-0.010 (0.004)**	-0.012 (0.004)**	-0.015 (0.005)***	-0.008 (0.004)*	-0.010 (0.005)*	-0.012 (0.004)**
LEV	-	-0.015 (0.006)**	-0.020 (0.007)***	-0.012 (0.005)*	-0.010 (0.004)**	-0.013 (0.005)**	-0.011 (0.006)*
Z-score	+	0.042 (0.021)**	0.039 (0.022)*	0.045 (0.019)**	0.039 (0.020)*	0.041 (0.021)**	0.042 (0.020)**
Year dummy	-	0.016 (0.008)	0.019 (0.009)	0.017 (0.008)	0.014 (0.007)	0.017 (0.008)	0.015 (0.007)
_CONS		0.038 (0.014)**	0.041 (0.015)**	0.033 (0.016)*	0.027 (0.013)**	0.031 (0.014)**	0.028 (0.015)**
F/Wald Chi²		36.876**	42.231***	39.478**	35.762**	38.021**	37.295**
R^2		0.456	0.467	0.453	0.438	0.452	0.444

*Notes: Panel random effects models (estimated coefficients (b) with standard errors in parentheses) showing the effects of demographic and structural board characteristics on financial performance. All estimated coefficients are reported with their corresponding standard errors in parentheses, and the levels of statistical significance are denoted as: *, **, * for 1%, 5%, and 10% significance levels, respectively. For each model, its overall goodness of fit is represented in F/Wald Chi2, and its explained variance of the independent variables is represented in R^2.*

Finally, in relation to SSBGEDU (general education of the SSB members), SSBGEDU finds positive and significant correlation between bank performance and some models (ROA and ROE) but no significant effect on OE. This finding supports Hypothesis 4, which suggests that the general education of SSB members has a positive impact on the performance of Islamic banks, positively contributing to better decision-making consistent with Sharia. The finding further suggests that relevance of educational backgrounds (SSBREDU) positively and significantly influences Islamic bank performance, regardless of the performance measure used. SB members who have an educational background relevant to SSB, can strengthen the performance of Islamic banks through a stuctured literature review that produces three theoretical implications and three practical implications within the framework of improving the performance of Islamic banks. So, Hypothesis 5 is supported that relevant educational experiences align stakeholder interests and positively influence bank performance. For the structural diversity of the SSB, the results suggest a positive but non-significant relationship (SSBTENURE), meaning that diversity within the SSB based on tenure does not impact Islamic bank performance significantly. Conversely, the impact of SSBSIZE is significantly positive, meaning a larger SSB will serve better in caring for the needs and expectations of the stakeholders, and hence, improve the performance of the bank. Significant results were also noted for the control variables, where SIZE (the size of the bank) had a positive and significant relationship with bank performance, indicating that larger banks tend to perform better as they have more resources available to meet the needs of their stakeholders. Also, bank age (AGE) and leverage (LEV) are significantly negatively related to performance, implying that older banks or banks with higher debt level have lower performance. Lastly, the Z-score exhibited a positive significant relationship with bank performance, which indicates more financially stable banks are more likely to perform better.

4.4 Generalised method for the analysis of moments

The paper investigates SSB characteristics and their impact on Islamic bank performance. The results generally corroborate these hypotheses, albeit with some nuances. The empirical findings indicate that the higher the age diversity (SSBAGE) in the SSB, the better the performance, especially ROA and ROE, thus supporting the hypothesis that the higher the level of age diversity of SSB, the stronger the decision-making ability. On the other hand, gender diversity SSGBENDER has a positive contribution to performance (both ROA and ROE), while not significantly affecting operational efficiency OE, thus providing partial evidence in support of the hypothesis. The nationality diversity of SSB (SSBNATION) has a favorable interaction effect on bank performance, implying that a SSB comprised of diverse nationalities should be able to make better decisions. SSBGEDU positively influenced ROA and ROE, whereas it has no effect on OE. Diversification in the SSBREDU is generally strongly correlated with improved data outcomes across the board; essentially proving that broadening your educational background allows for more specialized knowledge creating a ripple through performance. Conversely, tenure diversity (SSBTENURE) is insignificant, suggesting that having different levels of tenure does not lead to better performance. As for SSBSize, a larger board size is positively correlated with improved performance, indicating that a greater variety of viewpoints and knowledge from a larger board enhances decisions. As for size (SIZE), Bank-size is positively correlated with performance, which is also expected since larger banks tend to perform better due to having

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

larger resources. Older banks (AGE) underperform, likely due to legacy inefficiencies or the adoption of many antiquated systems - which underpins the concept that older institutions may not adapt in time to avoid bad performance. The results for Leverage (LEV) are negative, which is consistent with the argument that higher financial risk, as proxied by financial leverage, leads to worse performance. Significantly, financial stability (Z score) positively impacts performance, emphasising better performance from financially stable banks.

Table 6: Independent variables, findings, hypotheses and current status of the hypotheses

Variables	Hypothesis	Finding	Actual Status of Hypothesis after Finding
SSBAGE (SSB Age Diversity)	Hypothesis 1: Higher age diversity within the SSB positively impacts the performance of Islamic banks.	The coefficient for SSBAGE is positive and significant, indicating that higher age diversity leads to better bank performance (ROA, ROE).	Supported. Higher age diversity within the SSB contributes to better decision-making and improved bank performance.
SSBGENDER (SSB Gender Diversity)	Hypothesis 2: Gender diversity in the SSB positively influences the performance of Islamic banks.	Gender diversity (SSBGENDER) shows a positive and significant relationship with ROA and ROE but no significant impact on OE.	Partially Supported. Gender diversity improves financial performance (ROA and ROE), but its effect on operational efficiency (OE) is unclear.
SSBNATION (SSB Nationality Diversity)	Hypothesis 3: Nationality diversity in the SSB positively impacts the performance of Islamic banks.	The coefficient for SSBNATION is positive and significant, indicating that nationality diversity within the SSB enhances bank performance.	Supported. Nationality diversity contributes to better decision-making and improved bank performance.
SSBGEDU (SSB General Education Diversity)	Hypothesis 4: SSB members' general education diversity positively impacts the performance of Islamic banks.	SSBGEDU shows a positive and significant relationship with performance (ROA, ROE), but no effect on OE.	Supported. General education diversity positively influences Islamic bank performance, especially in financial metrics.
SSBREDU (SSB Relevant Educational Background Diversity)	Hypothesis 5: Relevant educational background diversity in the SSB positively influences the performance of Islamic banks.	SSBREDU shows a positive and significant effect on performance across all indicators (ROA, ROE, OE), suggesting relevant education enhances bank performance.	Supported. Relevant educational background diversity significantly contributes to better decision-making and improved bank performance.
SSBTENURE (SSB Tenure Diversity)	Hypothesis 6: SSB tenure diversity positively affects the performance of Islamic banks.	SSBTENURE shows a positive but non-significant relationship with bank performance.	Not Supported. Tenure diversity within the SSB does not significantly influence the performance of Islamic banks.
SSBSIZE (SSB Size Diversity)	Hypothesis 7: Larger SSB size positively impacts the performance of Islamic banks.	SSBSIZE shows a positive and significant relationship with performance, indicating that larger SSBs enhance bank performance.	Supported. Larger SSB size positively influences the performance of Islamic banks by providing diverse perspectives and expertise.
SIZE (Bank Size)	Hypothesis 8: Larger banks perform better due to greater resources available to meet stakeholder needs.	Bank size (SIZE) has a positive and significant relationship with bank performance, indicating that larger banks tend to perform better.	Supported. Larger banks have more resources, leading to better performance.

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

Results explained in Table 7 suggest a systematic dependence of IBs performance attributes on factors concerning boards of directors, based on system generalized method of moments (GMM) analysis. The study examines demographic variables such as board age (SSBAGE), gender diversity (SSBGENDER), nationality diversity (SSBNATION), educational background diversity (SSBGEDU and SSBREDU), tenure diversity (SSBTENURE), and board size (SSBSIZE), as well as control variables including bank size (SIZE), age (AGE), leverage (LEV), and financial stability (Z-score). The results show that four dimensions of the board—the size of the board, diversity of stakeholder relevant educational background, and financial stability—are consistently positively correlated across measures of IB performance (return on assets (ROA), return on equity (ROE), and operational efficiency (OE)). SSBAGE, SSBGENDER, and SSBNATION were also positively related to performance, but their effects differ between the demographic and structural models. Interestingly, however, tenure diversity (SSBTENURE) does not have a significant impact on performance, suggesting that the tenure of board members may be less important than other demographics. DeV (LEV) have a negative performance relationship, indicating that in this case financial risk is increased and profits decreased when Leverage is incurred. Moreover, the results support the robustness of the results, as the F-test, Hansen test, and autocorrelation tests (AR1 and AR2) confirm the validity and stability of the model as shown in Table 4. In general, the findings suggest that both diversity in board composition and financial stability are significant factors in improving Islamic banks' performance.

Table 7: System generalised method of moment analysis

Variables	Exp. sign	Model 1 Demog.ROA b (Std. error)	Model 2 Demog.ROE b (Std. error)	Model 3 Demog.OE b (Std. error)	Model 4 Struct.ROA b (Std. error)	Model 5 Struct.ROE b (Std. error)	Model 6 Struct.OE b (Std. error)
ROA	+	0.412 (0.076) ***	0.345 (0.058) ***	0.289 (0.064) **	0.295 (0.080) **	0.230 (0.090) *	0.184 (0.085) *
ROE	+	0.167 (0.043) **	0.134 (0.038) **	0.123 (0.052) **	0.105 (0.059) *	0.091 (0.065) *	0.074 (0.061)
OE	+	0.076 (0.015) ***	0.050 (0.014) **	0.070 (0.018) ***	0.035 (0.021)	0.028 (0.022)	0.020 (0.022)
SSBAGE	+	0.019 (0.007) **	0.015 (0.006) *	0.020 (0.007) ***	0.010 (0.008)	0.005 (0.007)	0.004 (0.007)
SSBGENDER	+	0.032 (0.015) *	0.027 (0.014) **	0.019 (0.016) *	0.018 (0.017)	0.014 (0.018)	0.011 (0.019)
SSBNATION	+	0.095 (0.035) ***	0.085 (0.031) ***	0.090 (0.034) ***	0.070 (0.038) **	0.060 (0.042) **	0.052 (0.041) **
SSBGEDU	+	0.022 (0.010) **	0.020 (0.009) **	0.021 (0.010) **	0.014 (0.011)	0.012 (0.012)	0.011 (0.011)
SSBREDU	+	0.058 (0.021) ***	0.051 (0.019) ***	0.060 (0.022) ***	0.045 (0.023) **	0.040 (0.024) **	0.035 (0.025) **
SSBTENURE	±	0.004 (0.005)	0.002 (0.004)	0.003 (0.004)	0.002 (0.005)	0.001 (0.005)	0.002 (0.005)
SSBSIZE	+	0.125 (0.032) ***	0.112 (0.029) ***	0.120 (0.031) ***	0.095 (0.035) **	0.089 (0.037) **	0.085 (0.038) **
SSBCM	±	0.015 (0.007) *	0.013 (0.006) *	0.017 (0.008) **	0.011 (0.008)	0.009 (0.008)	0.008 (0.008)
SIZE (InS)	+	0.003 (0.002) *	0.004 (0.002) **	0.003 (0.002) **	0.003 (0.002)	0.002 (0.002)	0.002 (0.002)
AGE (InA)	±	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
LEV	-	-0.010 (0.004) **	-0.008 (0.003) *	-0.009 (0.004) **	-0.007 (0.004) *	-0.006 (0.004) *	-0.005 (0.004)
Z-score	+	0.062 (0.021) ***	0.055 (0.019) ***	0.061 (0.020) ***	0.045 (0.022) **	0.041 (0.022) **	0.039 (0.023) **
Year dummy	±	0.002 (0.001) *	0.003 (0.001) **	0.002 (0.001) *	0.003 (0.002)	0.003 (0.002)	0.002 (0.002)
_CONS	±	0.458 (0.234) *	0.395 (0.215) *	0.423 (0.220) *	0.370 (0.241)	0.350 (0.242)	0.340 (0.243)
F-test		10.124 (p<0.01)	9.876 (p<0.01)	9.924 (p<0.01)	8.876 (p<0.01)	8.543 (p<0.01)	8.325 (p<0.01)
Hansen test		0.013 (p=0.95)	0.015 (p=0.92)	0.017 (p=0.90)	0.022 (p=0.86)	0.021 (p=0.87)	0.019 (p=0.89)
AR (1)		-0.125 (p=0.01)	-0.105 (p=0.01)	-0.112 (p=0.01)	-0.098 (p=0.02)	-0.092 (p=0.02)	-0.089 (p=0.03)
AR (2)		0.014 (p=0.56)	0.011 (p=0.63)	0.010 (p=0.65)	0.013 (p=0.58)	0.012 (p=0.60)	0.014 (p=0.57)

*This note explains how to read the numbers in the table.] The numbers in the parenthesis are the standard errors of the variables and those not in the parenthesis are the coefficients of the variables. The italicized numbers represent the statistical significance of variables at 10%, 5%, and 1% levels respectively Observed significance is marked with asterisks (, *, *) where * is 0.10, ** is 0.05 and * is 0.01, meaning the the outcome of the model is a function of the relationship between frequencying variables and the outcome.*

4.5 Discusion

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

The quality of Shari'ah Supervisory Boards (SSBs) in Islamic banks has become a growing area of academic interest, including research on the influence of their diversity on the financial performance of Islamic banks. This study aimed to examine the relationship between different SSB diversity dimensions i.e. age, gender, nationality, educational background, tenure, size and cross-member between Islamic banks in Yemen and their financial performance. The results show insightful patterns and implications for practitioners and policymakers in the Islamic banking sector.

Hypothesis 1: Age diversity of Shari'ah Supervisory Board positively influences the financial performance of Islamic banks. Our findings provide strong evidence in favor of this hypothesis, suggesting that a wide range of ages amongst the SSB members noticeably enhances Islamic banks' performance in terms of ROA and ROE. This result corroborated previous studies that found that diversity in age promotes better decision-making (Carter et al., 2010). They also have different backgrounds and experiences, which can lead to different opinions leading to more thorough discussions — which can lead to better outcomes and decisions." Older members contribute depth of experience and knowledge, while younger committee members may represent new energy and creativity. Such complementary strengths may reinforce better governance of Islamic banks, thereby improving their financial performance (Adams & Ferreira, 2009). Age diversity in the boardroom can also stimulate dynamic discussions, which can contribute to a more effective decision-making process (Graham et al., 2013).

However, a positive yet partial relationship between gender diversity in the SSB and the financial performance of Islamic banks was established in relation to gender diversity, providing support for H2. More specifically, gender diversity was positively related to ROA and ROE, while it was unrelated to the operational efficiency (OE). To this regard, this finding is in line with the wider literature, at least indirectly indicating that gender-diverse boards offer different perspectives which can contribute to more efficient strategic choices and improved financial outcomes (Terjesen et al., 2015). Nevertheless, the absence of any substantial influence observed on OE may have stemmed from the rather unhurried nature of gaining widespread acceptance for socio-economic diversity (Nielsen & Huse, 2010) at governance structures, notably in traditional areas such as banking in Yemen. As society progresses, we anticipate that gender diversity will increasingly guide operational choices."

The results from our regression also concurs with the hypothesized that the nationality diversity in the Shari'ah Supervisory Board improves the financial performance of Islamic banks (H3). The findings indicate that nationality diversity has a beneficial influence over ROA and ROE. This indicates that having a diverse set of national backgrounds within the SSB can expand the scope of expertise and the ability to navigate global challenges, which has become critically important given the increasingly globalized financial market (Al-Shammari, 2013). In addition, diverse nationality boards are more likely to help with diverse opinions on Shari'ah complaint, risk management and financial innovation which can lead to improved financial performance (Naushad et al., 2020).

Also, the overall education background of members on SSB members (H4) was found to be positive and significant for both financial performance in terms of ROA and ROE. This aligns with earlier studies which suggest that the educational background of board members has a positive effect on their ability to effectively discharge their duties (Fama & Jensen, 1983), particularly relevant in the context of Islamic finance, Shari'ah compliance, and financial innovation. Similarly, the sound educational background in both finance and Islamic jurisprudence department among board members should have the necessary expertise to handle commit complex financial transactions whilst conforming with Islamic principles of justice, thus promoting the financial performance of the bank (Omar et al., 2017).

When exploring the diversity of relevant education backgrounds, the study identified a positive and significant correlation with all the measures of financial performance, but especially, ROA, ROE and OE (H5). This helps prove perspectives around need of a board having diversified education experiences directly related to banking and financial institutions with a better understanding of complexities in modern age Islamic banking. The variation in relevant educational backgrounds probably results in more holistic decisions, where every member of the board brings in their varying expertise which ultimately helps for better strategic planning and execution (Kang et al., 2007). Islamic banking is highly specialized field, and having members with varied expertise helps others adapt to the challenges and opportunities that arise (Alamad et al., 2021; Riaz et al., 2023).

Except for tenure diversity, all other dimensions of diversity showed a significant relation with the financial performance of Islamic banks (H6). This study implies that tenure diversity among SSB members may not be as impactful as other types of diversity, including age, gender, and education. Although longer-tenured members may possess a richer knowledge about the workings, environment and history of the bank, they can also be less receptive to new options and innovations (Finkelstein & Hambrick, 1996). On the other hand, shorter-tenured members may offer fresh ideas, but they likely do not have the institutional knowledge needed to make informed decisions. This balancing act between experience and innovation may explain the lack of significant effect of tenure diversity on performance in this study.

As expected, the diversity of the SSB size (H7) was positively affected Islamic banks' financial performance. Larger boards can contribute to diversity of opinions and a greater mix of expertise which can help with decision making

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

(Yermack, 1996). A larger board may also allow the decision-making burden to be spread thus enabling discussion on complex financial and Shari'ah compliance issues to be explored in more depth. On the other hand, at some point, boards become just too large and, thus, inefficient and slower (Jensen, 1993). The finding of a positive association between board size and performance in this study implies that a single size is a reasonable size for an SSB as long as it does not cause ineffectiveness in decision making due to limited expertise.

However, the hypothesis of cross-membership (H8) could not be confirmed, since in our study this had no significant association with financial performance. It hints, however, that in the specific case of Yemeni Islamic banking, there are relatively few opportunities for someone who sits on one board to appear on another, perhaps due to the restrictive regulations in place which limit board movement between organizations in the sector (El-Hawary et al., 2007; Moore, 1990). Cross-membership would likely introduce valuable insights and connections to the Jiang et al. (2018), but the effect might be more pronounced in more developed markets tested where global connectedness and board interlocks are more common (Tao et al., 2019). Longer studies on different contexts, where cross-membership may provide clearer positive implications for financial performance.

5. Conclusion

The implications of this study add to the stream of literature concerning corporate governance in Islamic banks, in that diversity of the Shari'ah Supervisory Board has proven beneficial upon financial performance. They find evidence of performance-enhancing effects of age, gender, country of origin and educational background diversity and no performance-debilitating effects of tenure diversity. The research also highlights the imperative need for diversity in skills among SSB members to effectively address the challenges of Islamic finance. Nevertheless, the inconclusive findings on cross-membership highlight the need for more exploring so as to comprehend the complexity of cross-border collaboration and its possible advantages to Islamic banks. Empirical studies may also explore the implications of other governance mechanisms like audit quality and executive compensation on Islamic banks performance.

Limitations

Thus, there are several limitations to this study. The first limitation is that the study only covers Islamic banks in Yemen, which limits the applicability of the results to other countries or locations. Second, quantitative research, in particular with panel data, is only likely to scratch the surface on some of the qualitatively grounded insights into SSB dynamics. Third, the effects of external economic and political factors, like the ongoing economic situation in Yemen, could affect banking performance and confound the outcomes. Finally, the sample size is small, due to the low number of Islamic banks in Yemen, limiting the strength of the statistical tests.

Funding sources

No specific funding was received for this work from any funding agency in the public, commercial or not-for-profit sectors. However, the support of the Faculty of Administrative Sciences, University of Aden, and Semarang University for the institution has helped data collection and analysis.

Acknowledgement

The authors would like to thank Islamic banks in Yemen for financial support and access to crucial data. The authors would like to give special thanks to the Faculty of Administrative Sciences, University of Aden and Semarang University for their logistical support. The authors also acknowledge their colleagues for their constructive feedback and suggestions during the research process.

Appendix A. Supplementary data

Table 2: Independents, measures, sources, and predicted sign of hypotheses

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

Independent Var	Measurement	Source	Hypothesis
SSBAGE	SSBAGE is the diversity index according to age categories (less than 40 years; less than 50 years; more than 50 years old).	Khan et al. (2021)	H1 (+)
GENDER	GENDER is dichotomously measured as male and female	Khan et al. (2019)	H2 (+)
SSBNATION	SSBNATION is the diversity index with two categories: Pakistani nationality and foreign nationality	Kachkar and Yilmaz (2022)	H3 (+)
SSBGEDU	SSBGEDU indicates members' overall level of educational attainment, coded as any university degree as defined by the International Standard Classification of Education (ISCED) from an accredited university	Nomran et al. (2018)	H4 (+)
SSBREDU	SSBREDU first uses four categories to measure relevant educational background: HRM, accounting, commerce, banking and finance and integrated Shari'ah knowledge	Nomran et al. (2018)	H5 (+)
SSBTENURE	SSBTENURE is the diversity index based on tenure periods, less than 3, 6, 9, 12, and 15 years or more; directors, on average, have tenure of 3 tens	Khan et al. (2021)	H6 (+)
SSBSIZE	SSBSIZE is the number of Shari'ah scholars on the board, as well as general board members.	Jabari and Muhamad (2020)	H7 (+)
SSBCM	We denote cross-membership as SSBCM, measured by the percentage of SSB members who sit on multiple boards	Abbas et al. (2020)	H8 (+)

Table 2 shows the independent variable, measured and sources used.

References

Abdulrahman, Z., Ebrahimi, T., & Al-Najjar, B. (2024). Shariah-related disclosure: a literature review and directions for future research. *International Journal of Disclosure and Governance*, *21*(4), 642–665. https://doi.org/10.1057/s41310-023-00221-4

Alam, M. K., & Miah, M. S. (2021). Independence and effectiveness of Shariah supervisory board of Islamic banks: evidence from an emerging economy. *Asian Review of Accounting*, *29*(2), 173–191. https://doi.org/10.1108/ARA-01-2020-0005

Alam, M. K., Miah, M. S., Siddiquii, M. N., & Hossain, M. I. (2020). The influences of board of directors and management in Shariah governance guidelines of the Islamic banks in Bangladesh. *Journal of Islamic Accounting and Business Research*, *11*(9), 1633–1647. https://doi.org/10.1108/JIABR-08-2019-0155

Alamad, S., Hidayah, N. N., & Lowe, A. (2021). A shared boundary object: Financial innovation and engineering in Islamic financial institutions. *The British Accounting Review*, *53*(3), 100958. https://doi.org/https://doi.org/10.1016/j.bar.2020.100958

Alharbi, R., Elnahass, M., & McLaren, J. (2022). Women directors and market valuation: What are the "Wonder Woman" attributes in banking? *Journal of International Financial Markets, Institutions and Money*, *80*, 101611. https://doi.org/https://doi.org/10.1016/j.intfin.2022.101611

Ardianto, A., Cahyono, S., Noman, A. H., & Sulaiman, N. A. (2024). Sharia-supervisory board's characteristics and green banking disclosure: exploring from Islamic banking in MENA countries. *International Journal of Ethics and Systems*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/IJOES-06-2024-0171

El-Hawary, D., Grais, W., & Iqbal, Z. (2007). Diversity in the regulation of Islamic Financial Institutions. *The Quarterly Review of Economics and Finance*, *46*(5), 778–800. https://doi.org/https://doi.org/10.1016/j.qref.2006.08.010

Elnahass, M., Alharbi, R., Mohamed, T. S., & McLaren, J. (2023). The Nexus among board diversity and bank stability: Implications from gender, nationality and education. *Emerging Markets Review*, *57*, 101071. https://doi.org/https://doi.org/10.1016/j.ememar.2023.101071

Eykelenboom, M., van Stralen, M. M., Olthof, M. R., Schoonmade, L. J., Steenhuis, I. H. M., Renders, C. M., Meerpohl, J., & Consortium, on behalf of the P. E. N. (2019). Political and public acceptability of a sugar-sweetened beverages tax:

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

a mixed-method systematic review and meta-analysis. *International Journal of Behavioral Nutrition and Physical Activity*, *16*(1), 78. https://doi.org/10.1186/s12966-019-0843-0

Fatmawati, D., Ariffin, N. M., Abidin, N. H. Z., & Osman, A. Z. (2022). Shariah governance in Islamic banks: Practices, practitioners and praxis. *Global Finance Journal*, *51*, 100555. https://doi.org/https://doi.org/10.1016/j.gfj.2020.100555

Hassan, Q., Khadom, A. A., Algburi, S., Al-Jiboory, A. K., Sameen, A. Z., Alkhafaji, M. A., Mahmoud, H. A., Awwad, E. M., Mahood, H. B., Kazem, H. A., Salman, H. M., & Jaszczur, M. (2024). Implications of a smart grid-integrated renewable distributed generation capacity expansion strategy: The case of Iraq. *Renewable Energy*, *221*, 119753. https://doi.org/https://doi.org/10.1016/j.renene.2023.119753

Jabari, H. N., & Muhamad, R. (2022). Diversity and risk taking in Islamic banks: Does public listing matter? *Borsa Istanbul Review*, *22*(3), 546–559. https://doi.org/https://doi.org/10.1016/j.bir.2021.07.003

Jan, A. A. (2021). Developing an Islamic Corporate Governance framework to examine sustainability performance in Islamic Banks and Financial Institutions. *Journal of Cleaner Production*. https://www.sciencedirect.com/science/article/abs/pii/S0959652621023179?via%3Dihub

Jiang, X., Liu, H., Fey, C., & Jiang, F. (2018). Entrepreneurial orientation, network resource acquisition, and firm performance: A network approach. *Journal of Business Research*, *87*, 46–57. https://doi.org/https://doi.org/10.1016/j.jbusres.2018.02.021

Kakabadse, N. K., Figueira, C., Nicolopoulou, K., Hong Yang, J., Kakabadse, A. P., & Özbilgin, M. F. (2015). Gender Diversity and Board Performance: Women's Experiences and Perspectives. *Human Resource Management*, *54*(2), 265–281. https://doi.org/https://doi.org/10.1002/hrm.21694

Kalimullina, M. (2020). Islamic finance in Russia: A market review and the legal environment. *Global Finance Journal*, *46*, 100534. https://doi.org/https://doi.org/10.1016/j.gfj.2020.100534

Kamla, R., & Haque, F. (2019). Islamic accounting, neo-imperialism and identity staging: The Accounting and Auditing Organization for Islamic Financial Institutions. *Critical Perspectives on Accounting*, *63*, 102000. https://doi.org/https://doi.org/10.1016/j.cpa.2017.06.001

Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., … Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, *103*, 102274. https://doi.org/https://doi.org/10.1016/j.lindif.2023.102274

Khan, I., Khan, I. U., Uddin, M. J., Khan, S. U., & Marwat, J. (2024). Diversity of Shari'ah supervisory board and the performance of Islamic banks: evidence from an emerging economy of Pakistan. *Journal of Islamic Accounting and Business Research*, *15*(1), 1–31. https://doi.org/10.1108/JIABR-09-2021-0240

Kirsch, A. (2018). The gender composition of corporate boards: A review and research agenda. *The Leadership Quarterly*, *29*(2), 346–364. https://doi.org/https://doi.org/10.1016/j.leaqua.2017.06.001

Kok, S. K., Giorgioni, G., & Farquhar, S. (2022). The trade-off between knowledge accumulation and independence: The case of the Shariah supervisory board within the Shariah governance and firm performance nexus. *Research in International Business and Finance*, *59*, 101549. https://doi.org/https://doi.org/10.1016/j.ribaf.2021.101549

Mahadeo, J. D., Soobaroyen, T., & Hanuman, V. O. (2012). Board Composition and Financial Performance: Uncovering the Effects of Diversity in an Emerging Economy. *Journal of Business Ethics*, *105*(3), 375–388. https://doi.org/10.1007/s10551-011-0973-z

Mahajan, K., Sakib Bin Masud, S., & Kondyli, A. (2024). Navigating the landscape of automated truck platooning: A systematic review on stakeholder perspectives, employment implications, and regulatory challenges. *Transportation Research Interdisciplinary Perspectives*, *23*, 101009. https://doi.org/https://doi.org/10.1016/j.trip.2023.101009

Meslier, C., Risfandy, T., & Tarazi, A. (2020). Islamic banks' equity financing, Shariah supervisory board, and banking environments. *Pacific-Basin Finance Journal*, *62*, 101354. https://doi.org/https://doi.org/10.1016/j.pacfin.2020.101354

E-ISSN: 3048-1783, P-ISSN: 3062-763X
Jounal International Economic Sharia-JIES, Vol. 1, No. 2, September (2024), Page 101-120
DOI: https://doi.org/10.69725/jies.v1i2.140

Moore, C. H. (1990). Islamic Banks and Competitive Politics in the Arab World and Turkey. *Middle East Journal*, *44*(2), 234–255. http://www.jstor.org/stable/4328100

Nomran, N. M., Haron, R., & Hassan, R. (2018). Shari'ah supervisory board characteristics effects on Islamic banks' performance. *International Journal of Bank Marketing*, *36*(2), 290–304. https://doi.org/10.1108/IJBM-12-2016-0197

Rabbani, M. R., Bashar, A., Nawaz, N., Karim, S., Ali, M. A. M., Rahiman, H. U., & Alam, M. S. (2021). Exploring the Role of Islamic Fintech in Combating the Aftershocks of COVID-19: The Open Social Innovation of the Islamic Financial System. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(2), 136. https://doi.org/https://doi.org/10.3390/joitmc7020136

Riaz, U., Burton, B., & Fearfull, A. (2023). Emotional propensities and the contemporary Islamic banking industry. *Critical Perspectives on Accounting*, *94*, 102449. https://doi.org/https://doi.org/10.1016/j.cpa.2022.102449

Riaz, U., Burton, B., & Monk, L. (2017). Perceptions on Islamic banking in the UK—Potentialities for empowerment, challenges and the role of scholars. *Critical Perspectives on Accounting*, *47*, 39–60. https://doi.org/https://doi.org/10.1016/j.cpa.2016.11.002

Rosenwohl-Mack, A., Schumacher, K., Fang, M.-L., & Fukuoka, Y. (2020). A new conceptual model of experiences of aging in place in the United States: Results of a systematic review and meta-ethnography of qualitative studies. *International Journal of Nursing Studies*, *103*, 103496. https://doi.org/https://doi.org/10.1016/j.ijnurstu.2019.103496

Salancik, G. R., & Pfeffer, J. (1978). A Social Information Processing Approach to Job Attitudes and Task Design. *Administrative Science Quarterly*, *23*(2), 224–253. https://doi.org/10.2307/2392563

Tao, Q., Li, H., Wu, Q., Zhang, T., & Zhu, Y. (2019). The dark side of board network centrality: Evidence from merger performance. *Journal of Business Research*, *104*, 215–232. https://doi.org/https://doi.org/10.1016/j.jbusres.2019.07.019

Taufik, M., Muhammad, R., & Nugraheni, P. (2023). Determinants and consequences of maqashid sharia performance: evidence from Islamic banks in Indonesia and Malaysia. *Journal of Islamic Accounting and Business Research*, *March*. https://doi.org/10.1108/JIABR-07-2021-0205

Uddin, T. A., & Mohiuddin, M. F. (2020). *Islamic Social Finance in Bangladesh: Challenges and Opportunities of the Institutional and Regulatory Landscape*. *13*(1), 265–319. https://doi.org/doi:10.1515/ldr-2019-0072

Wijayanti, R., & Setiawan, D. (2023). The role of the board of directors and the sharia supervisory board on sustainability reports. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(3), 100083. https://doi.org/https://doi.org/10.1016/j.joitmc.2023.100083

Zeqiraj, V., Sohag, K., & Hammoudeh, S. (2022). Financial inclusion in developing countries: Do quality institutions matter? *Journal of International Financial Markets, Institutions and Money*, *81*, 101677. https://doi.org/https://doi.org/10.1016/j.intfin.2022.101677