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Board Gender and Educational Diversity on Financial Stability In Indonesia's Islamic Bank

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ABSTRACT

This study examines the effect of three dimensions: gender, educational level, and educational specialization on the board of directors (BOD) and sharia supervisory board (SSB) in Islamic banks' financial stability. Data from 13 Islamic commercial banks in Indonesia (2015-2023) were analyzed using panel data regression with Z-score as the stability measure. Results reveal mixed effects: gender diversity on SSB and educational level diversity on BOD negatively affect bank stability, while educational specialization diversity on SSB positively contibutes to stability. Conversely, gender diversity on BOD, educational level diversity on SSB, and educational specialization diversity on BOD show no significant effects. These findings suggest that board composition characteristics have context-specific and structure-specific implications for Islamic banking stability, with business-focused expertise in supervisory functions being particularly valuable. Management should strategically evaluate board diversity dimensions beyond mere representation to enhance governance effectiveness.

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Keywords:
Diversity, Financial Stability, Islamic Bank.

Introduction

Islamic banks worldwide have grown steadily at 5% per year (S&P Global Ratings, 2022), driven by rising Muslim populations who prefer banks that follow their religious principles (Nabela & Thamrin, 2022). However, Islamic banks in Indonesia and Southeast Asia face a serious problem: their financial stability is weaker than Islamic banks elsewhere, despite the region's large Muslim population. These banks hold less than half of global Islamic banking assets (IFSI, 2022). Low stability is dangerous. When banks lack stability,

they struggle to manage risks, handle economic shocks, and survive crises (Shahriar et al., 2023). Why are Indonesian Islamic banks less stable, and what can fix this problem?

Research points to board composition as one answer. Boards control major decisions and company direction (Mukhibad et al., 2024). Here's how boards affect stability: diverse boards bring different knowledge and experiences to discussions, which helps catch risks that homogeneous boards might miss (Abbas & Frihatni, 2023; Jabari & Muhamad, 2022). For example, when board members come from different backgrounds, they question each other's assumptions more, look at problems from multiple angles, and make more balanced decisions. This thorough process reduces the chance of costly mistakes that harm stability. Past research shows gender diversity, age differences, and educational variety on boards can improve company outcomes (Elnahass et al., 2023; Mukhibad et al., 2024; Zhou, 2019). But almost no research examines these factors specifically in Islamic banks (Mukhibad et al., 2024).

We focus on three diversity types that could solve the stability problem. First, gender diversity. In Indonesia, only 7% of companies have women on their boards (Abbas & Frihatni, 2023), largely because historical gender inequality blocked women from leadership (World Economic Forum, 2018). Women can enhance stability through several mechanisms. Research shows women directors ask more questions and demand more information before decisions, leading to more careful risk assessment (Zhou, 2019). This cautious approach has helped banks avoid failures (Dang et al., 2023). Second, education level matters. Directors with doctoral degrees know research methods and analytical techniques that help them spot complex risks others miss (Audretsch & Lehmann, 2006). Third, business education backgrounds give directors practical skills to understand banking transactions and financial risks (Elnahass et al., 2023). The problem is we don't know if these diversity benefits work the same way in Islamic banks, which have different structures than conventional banks.

This study addresses the stability problem by examining whether diversity in both the board of directors and the sharia supervisory board can improve Indonesian Islamic bank stability. Islamic banks are unique because they have two boards working together. The board of directors runs business operations, while the sharia board ensures all activities follow Islamic law (Jabari & Muhamad, 2022) . This study investigates whether diversity effects manifest equally in both board types or vary according to their distinct governance functions. We test gender diversity, education levels, and business backgrounds across both boards. Previous studies looked at these factors separately or only in conventional banks. Our findings will tell Islamic bank managers specifically which diversity

factors matter most for improving stability, helping them make concrete hiring decisions for their boards.

Literatures Review

Upper Echelons Theory

The Upper Echelons Theory was first developed by Hambrick & Mason in 1984. This theory posits that a firm's performance is the result of the characteristics of employees at the top management level. These characteristics influence decision-making processes and the strategic actions undertaken by top management. Individual characteristics are shaped by personal experiences, values, and personality traits (Hambrick, 2007). Consequently, the interpretations held by each member of top management will vary according to these characteristics. In line with this theory, gender and educational background should also be taken into consideration. Differences in gender and educational background can influence individuals in their decision-making processes. Therefore, incorporating diversity within the board can broaden perspectives overall, leading to more comprehensive decision-making.

Resource Dependence Theory

Resource Dependence Theory was introduced by Pfeffer and Salancik in 1978. This theory explains that, in order to sustain their operations, firms are highly dependent on external resources. Consequently, firms strive to control their environment by securing the resources they need. Furthermore, the theory posits that the board of directors serves as a strategic resource that connects the firm to other organizations, thereby reducing its dependence on external resources. The board provides value to the firm through its external relationships by (1) offering information, advice, and counsel, (2) establishing communication networks between the firm and its external environment, (3) obtaining support from influential organizations, and (4) enhancing the legitimacy of the firm (Pfeffer & Salancik, 1978).

Pfeffer (1972) emphasized that the composition of a company's board of directors is not formed randomly; rather, it represents a rational response to external conditions. In simple terms, the composition of the board is shaped by the firm's needs to achieve its objectives, leading to a tendency toward diversity. Diversity within the board—in terms of gender, educational level, and background—can enhance the firm's decision-making processes (Abbas & Frihatni, 2023; Jabari & Muhamad, 2022). This is because a more diverse board composition provides broader and more varied perspectives.

Gender Diversity and Financial Stability

Financial stability means a company can handle shocks and disturbances in its financial system (Bank Indonesia, 2022). Stability requires good planning, sound decisions, and effective processes. Board composition matters here, especially in boards of directors and sharia supervisory boards. Research shows gender diversity improves company stability (Dang et al., 2023; Elnahass et al., 2023). Understanding the causal mechanisms underlying this relationship remains essential for theoretical advancement.

The literature says women are "more cautious" in decision-making (Byron & Post, 2016; Zhou, 2019). This sounds simple but it's actually unclear. Caution could work through different paths. First, women might avoid risks more, leading to conservative investments and strict lending standards. This directly reduces the chance of bank failure. Second, women might just be more thorough—asking more questions, demanding more information, and checking facts carefully. This isn't risk avoidance; it's better analysis. Third, women might think about more stakeholders when deciding, considering employees and community impacts alongside profits. This prevents short-sighted decisions that hurt long-term stability. Fourth, women might monitor management more strictly, catching problems early. These four mechanisms are different and would show up differently in bank behavior.

However, existing studies fail to empirically test which causal mechanism operates. Research simply attributes cautious behavior to women directors and assumes this produces positive outcomes, without examining conditions under which caution may be beneficial or detrimental. In fast-growing markets like Islamic finance (growing 5% yearly), too much caution means missing opportunities. Competitors who take reasonable risks gain market share. The cautious bank falls behind and eventually becomes less stable because it's uncompetitive. Excessive caution can also slow down decisions so much that banks miss time-sensitive deals. And innovation suffers when boards are too conservative. Islamic banks need new products to compete with conventional banks, but risk-averse boards might block innovation.

The effects of cautious decision-making appear context-dependent. Conservative approaches likely prove beneficial during periods of financial instability when systemic risk-taking becomes excessive and threatens institutional survival. Minton et al. (2014) found that banks with more women took fewer risks before 2008, which protected them when the crisis hit. Caution also helps in complex situations where mistakes are costly. Islamic banking is complex because banks must follow both financial regulations and religious law. Careful checking prevents expensive violations. But caution hurts when

markets are growing and banks need to expand. It hurts when innovation is necessary for competition. The literature ignores these tradeoffs.

In the Islamic banking context, an additional theoretical consideration emerges. The sharia board already makes the bank conservative by blocking anything that violates Islamic law. If the sharia board already provides religious caution, does adding gender diversity on the business board help more, or does it create too much caution overall? Southeast Asian Islamic banks lag behind global competitors. They hold less than half of global assets despite having large Muslim populations. This competitive disadvantage suggests that strategic boldness, rather than enhanced caution, may be necessary for improving regional performance. Gender diversity's benefits might work differently here than in developed markets.

Resource Dependence Theory suggests gender diversity helps companies estimate needed resources better by including diverse opinions (Goodstein et al., 1994). Women and men have different attributes and values that help achieve company goals (Levi et al., 2014). These differences expand what boards consider, making them more effective. Upper Echelons Theory adds that women often have different career backgrounds than men (Byron & Post, 2016). These different experiences bring alternative knowledge to boardrooms. This makes boards more careful about how decisions affect various stakeholders. Based on these considerations, we hypothesize:

H1: Gender diversity in the board of directors has a positive effect on bank stability.

H2: Gender diversity in the sharia supervisory board has a positive effect on bank stability.

Educational Level Diversity and Financial Stability

Upper Echelons Theory says company performance reflects leader characteristics (Hambrick & Mason, 1984). Educational background is a key characteristic shaped by individual experience. Higher education usually means more advanced knowledge and skills. (Wang et al., 2017) argue that education level indicates someone's competence. Achieving financial stability requires people with various education levels because diversity relates to decision-making and strategic choices.

However, the causal mechanism linking doctoral qualifications to financial stability remains underspecified in existing literature. One argument is that PhDs know research methods, can analyze complex data, and think systematically about problems. They might spot risks that others miss. Another argument is that PhDs bring academic networks and access to cutting-edge knowledge. But there's a counter-argument too. PhDs might focus too much on theory and not enough on practical business realities. They might overcomplicate

simple problems or push risky innovations because academic training values novelty. (Marie et al., 2021) found that directors holding doctoral degrees adversely affected bank performance, suggesting that highly educated board members may pursue riskier strategies based on expectations of superior returns, thereby undermining stability (Umar et al., 2024). The relationship between education level and stability isn't automatically positive.

Homogeneous educational backgrounds create problems. When all board members have similar education, they think alike (Magnanelli et al., 2021). This limits creativity and problem-solving. They might miss alternatives that someone with different training would see. Educational diversity should help boards have broader discussions and consider more possibilities when making stability-related decisions. Based on these considerations, we hypothesize:

H3: Educational level diversity in the board of directors has a positive effect on bank stability.

H4: Educational level diversity in the sharia supervisory board has a positive effect on bank stability.

Educational Specialization Diversity and Financial Stability

Islamic banks are businesses that follow Sharia principles. People running these organizations need relevant business knowledge. This makes educational specialization important. Board members with accounting backgrounds produce higher quality financial reports because they learned these skills in school (Ason et al., 2021). Board members with economics, finance, or business degrees serve as strategic resources by combining their competencies to support board responsibilities (Witono et al., 2023).

However, existing research overlooks a critical distinction: possessing business credentials does not necessarily translate into effective knowledge application in governance contexts. The literature assumes credentials equal expertise in practice, but that's not always true. Someone might have a business degree but twenty years of outdated knowledge. Or they might have general business training without specific knowledge of Islamic finance complexities. Studies measure education as a credential (yes/no, what percentage) but never measure whether board members actually apply their knowledge in board meetings.

Jabari & Muhamad (2022) emphasize that boards need members with business qualifications to understand banking transactions and improve decisions. This seems especially important for sharia supervisory boards. Traditional sharia scholars know Islamic law but might not understand modern financial instruments well. When sharia

board members also have business backgrounds, they can evaluate whether products are both Shariah-compliant and financially sound. Boadi et al. (2023) found that financial expertise helps boards identify risks and prevent failures. Based on these considerations, we hypothesize:

H5: Educational specialization diversity in the board of directors has a positive effect on bank stability.

H6: Educational specialization diversity in the sharia supervisory board has a positive effect on bank stability.

Methods

This study uses a quantitative approach to examine causal relationships between board diversity and Islamic bank stability. We focus on Islamic Commercial Banks (Bank Umum Syariah) operating in Indonesia. The sample selection followed purposive sampling with specific criteria: banks must have operated continuously from 2015 to 2023, published complete annual reports during this period, and disclosed information about board composition including gender and educational backgrounds. These criteria resulted in 13 Islamic Commercial Banks, providing 117 potential observations (13 banks × 9 years). However, after removing observations with missing data, the final sample consists of 87 bank-year observations covering the period 2015-2023.

We collected all data manually from banks' annual financial reports available on their official websites. For each bank-year, we recorded: (1) board of directors composition including gender and educational backgrounds of all members; (2) sharia supervisory board composition with the same details; (3) financial data including total assets and Z-score components; and (4) bank establishment year.

Dependent Variables

Bank stability is measured using the Z-score, calculated as:

$$Z - Score = \frac{(ROA + CAR)}{\sigma ROA}$$

Where ROA is return on assets, CAR is capital ratio, and σ(ROA) is the standard deviation of ROA calculated over a three-year rolling window. Higher Z-scores indicate greater stability because they show the bank can absorb larger losses before insolvency. We use natural logarithm of Z-score in regression analysis to address skewness in the distribution.

Independent Variables

Gender diversity is measured separately for the board of directors (BODW) and sharia supervisory board (SSBW) using dummy variables. BODW equals 1 if at least one woman

serves on the board of directors, 0 otherwise. SSBW equals 1 if at least one woman serves on the sharia supervisory board, 0 otherwise. We use dummy variables rather than proportions because many banks have zero or very few women on boards, making proportion measures less meaningful.

Educational level diversity has two components. BODPHD measures the proportion of board of directors members holding doctoral degrees (PhD or equivalent). SSBPHD measures the proportion of sharia supervisory board members holding doctoral degrees. We calculate these as: number of members with PhDs divided by total board members.

Educational specialization diversity also has two components. BODBUSS measures the proportion of board of directors members with degrees in business-related fields (accounting, finance, business administration, economics, or management). SSBBUSS measures the proportion of sharia supervisory board members with business-related degrees, calculated the same way. We determined degree fields from the educational background information reported in annual reports, which typically lists degree type and major.

Control Variables

We include two control variables that prior research shows affect bank stability. Bank age (AGE) is measured as the number of years since the bank began operating as an Islamic commercial bank, calculated as observation year minus establishment year. For banks that converted from conventional to Islamic banking, we use the conversion year as the starting point. Bank size (SIZE) is measured as the natural logarithm of total assets in billions of rupiah. We use logarithm transformation because bank assets vary widely across the sample, and this transformation normalizes the distribution.

Results

Descriptive Statistical Analysis

Table 1 shows how many Islamic banks in our sample have women serving on their boards. The results reveal significant gender imbalance, particularly on sharia supervisory boards. Out of 87 bank-year observations, 49 cases (56%) have at least one woman on the board of directors. This means slightly more than half of Indonesian Islamic banks include women in their business leadership. However, the picture looks very different for sharia supervisory boards. Only 11 observations (12%) have women serving in this religious oversight role. This stark difference suggests that while Islamic banks are gradually including women in business management, religious governance remains predominantly male-dominated. The low female representation on sharia boards may reflect traditional

interpretations of Islamic scholarship that historically favored male religious authorities, or it may indicate a shortage of women trained in both Islamic jurisprudence and modern finance.

Table 1. Sample Distribution

Variable	Total	N
Women BOD	49	87
Women SSB	11	87

(Source: Eviews 12, Data Processed, 2025)

Table 2 presents descriptive statistics for all continuous variables in the study. The dependent variable, bank stability measured by Z-score, has a mean of 11.402 with substantial variation (standard deviation = 15.914). The minimum Z-score of 2.627 indicates some banks in the sample experienced periods of relatively low stability, while the maximum of 98.717 shows other banks maintained extremely high stability buffers. This wide range suggests Indonesian Islamic banks differ considerably in their financial resilience. The average Z-score of 11.402 indicates that most sample banks maintain reasonably healthy stability levels, though some face greater vulnerability.

For educational level diversity, BODPHD shows an average of 0.022 (2.2%), meaning doctoral degree holders are rare on boards of directors. The maximum value of 0.200 indicates that even the most educated boards have only 20% PhD holders. This suggests Indonesian Islamic banks generally don't prioritize advanced academic credentials for business leadership positions. In contrast, SSBPHD averages 0.541 (54.1%), showing that more than half of sharia supervisory board members typically hold doctoral degrees. This makes sense given that sharia board members are primarily religious scholars, and advanced degrees in Islamic jurisprudence are common in this profession. The wide standard deviation (0.372) indicates considerable variation across banks—some sharia boards are entirely composed of PhD holders while others have none.

The educational specialization variables reveal interesting patterns. BODBUSS has a mean of 0.688 (68.8%) with a minimum of 0.250, indicating that every bank in the sample has at least 25% of board directors with business-related educational backgrounds. Most boards lean heavily toward business expertise, which is logical given their responsibility for commercial banking operations. The average suggests roughly two-thirds of directors have training in accounting, finance, economics, or business administration. SSBBUSS tells a different story, averaging only 0.285 (28.5%). Most sharia board members come from religious studies backgrounds rather than business fields. This creates a potential

knowledge gap—sharia boards must evaluate complex financial products for religious compliance, yet most members lack formal business training. The maximum value of 0.500 shows that even the most business-oriented sharia boards have only half their members with business degrees.

The control variables show that sample banks average 11.896 years of operation, with some banks being newly established (minimum = 0) and others having operated for 30 years since becoming Islamic commercial banks. Bank size, measured by log of total assets, averages 16.200, which translates to approximately 12 trillion rupiah (roughly $800 million USD) in assets. The range from 13.402 to 19.683 indicates substantial size variation—from relatively small Islamic banks to large institutions competing with major conventional banks.

Table 2. Descriptive Statistic

Variable	N	Min	Max	Mean	Std. Dev.
Z-Score	87	2,627	98,717	11,402	15,914
BODPHD	87	0,000	0,200	0,022	0,334
SSBPHD	87	0,000	1,000	0,541	0,372
BODBUSS	87	0,250	1,000	0,688	0,226
SSBBUSS	87	0,000	0,500	0,285	0,229
AGE	87	0,000	32,000	11,896	6,936
SIZE	87	13,402	19,683	16,200	1,223

(Source: Eviews 12, Data Processed, 2025)

Model Selection and Classical Assumption Tests

Before running the main regression, we conducted tests to select the most appropriate panel data model. Table 3 shows the results. The Chow test compares the Common Effect Model against the Fixed Effect Model. The probability value of 0.000 ($p < 0.05$) indicates the Fixed Effect Model fits better than the pooled Common Effect Model. Next, we compared the Fixed Effect Model with the Random Effect Model using the Hausman test. The probability of 0.058 ($p > 0.05$) suggests the Random Effect Model is more appropriate than the Fixed Effect Model. Finally, the Lagrange Multiplier test confirms the Random Effect Model is superior to the Common Effect Model ($p = 0.000$). Based on these sequential tests, we selected the Random Effect Model for hypothesis testing.

Table 3. Preliminary Test

Test Summary	Probability
Chow Test: Cross-section Chi-Square	0,000
Hausman Test: Cross-section Random	0,058
Lagrange Multiplier Test: Breusch-Pagan Cross-section	0,000

(Source: Eviews 12, Data Processed, 2025)

For the Random Effect Model, we only need to test for multicollinearity since other classical assumptions (heteroskedasticity and autocorrelation) are not required for this specification. Table 4 presents the correlation matrix. All correlation coefficients fall below 0.80, indicating multicollinearity is not a concern. The highest correlation is 0.509 between BODPHD and SIZE, which is well within acceptable limits. This means our independent variables are sufficiently distinct and won't cause estimation problems.

Table 4. Multicolinearity Test

	BODW	SSBW	BOD PHD	SSB PHD	BOD BUSS	SSB BUSS	AGE	SIZE
BODW	1	-0,083	-0,317	-0,160	0,170	-0,112	-0,500	-0,343
SSBW	-0,083	1	0,162	0,096	0,397	-0,175	0,351	-0,053
BODPHD	-0,317	0,162	1	-0,024	0,099	0,076	0,209	0,509
SSBPHD	-0,160	0,096	-0,024	1	0,175	-0,367	0,062	0,159
BODBUSS	0,170	0,397	0,099	0,175	1	-0,360	-0,007	-0,108
SSBBUSS	-0,112	-0,175	0,076	-0,367	-0,360	1	0,168	-0,001
AGE	-0,500	0,351	0.209	0,062	-0,007	0,168	1	0,314
SIZE	-0,342	-0,053	0,509	0,159	-0,108	-0,001	0,314	1

(Source: Eviews 12, Data Processed, 2025)

Panel Data Analysis Test

Table 5 presents the main regression results testing our six hypotheses about board diversity and bank stability. The model as a whole is statistically significant (F-statistic probability = 0.0000), indicating that collectively, our independent variables explain variation in bank stability. The R-squared value of 0.4266 means approximately 43% of stability variation is explained by board diversity and control variables. While this leaves 57% unexplained, an R-squared around 0.40 is reasonable for social science research examining organizational outcomes, which are influenced by many factors beyond board composition.

Table 5. Panel Data Analysis Results

Variable	Coefficient	Prob.	Note
BODW	0,0976	0,4105	Reject H_1
SSBW	-0,5631	0,0011	Reject H_2
BODPHD	-3,1555	0,0042	Reject H_3
SSBPHD	-0,1144	0,5899	Reject H_4
BODBUSS	-0,3223	0,1702	Reject H_5
SSBBUSS	0,8244	0,0113	Accept H_6
AGE	0,0655	0,0002	
SIZE	-0,2366	0,0208	
Constant	5,3967	0,0007	

R-Squared	0,4266
Prob(F-Statistic)	0,0000

(Source: Eviews 12, Data Processed, 2025)

Prior to examining the diversity variables, the discussion begins with the control variables, as they provide the necessary contextual framework. Bank age (AGE) has a positive and significant effect on stability (β = 0.0655, p = 0.0002). Each additional year of operation increases the Z-score by approximately 0.0655 points. This makes intuitive sense: older banks have more experience managing risks, have established customer bases that provide stable deposits, and have survived previous economic challenges that tested their resilience. Older institutions also benefit from organizational learning—they've refined their processes and accumulated knowledge about what works in Islamic banking. This finding aligns with organizational lifecycle theory, which suggests maturity brings stability.

Interestingly, bank size (SIZE) shows a negative significant effect (β = -0.2366, p = 0.0208). Larger banks are actually less stable according to our results. This seems counterintuitive since we might expect bigger banks to be safer due to diversification and resources. However, several explanations exist. First, larger Islamic banks may take on more complex operations and riskier portfolios as they grow, pursuing higher returns that come with greater risk. Second, "too big to fail" dynamics might make large banks complacent about risk management, assuming government support during crises. Third, in the Indonesian context specifically, larger Islamic banks compete more directly with major conventional banks, which may push them into riskier competitive strategies. Finally, the relationship between size and stability may be non-linear—moderate size helps, but excessive size creates complexity that's hard to manage. This finding suggests Indonesian Islamic banks should focus on sustainable growth rather than size maximization.

Discussions

Gender Diversity on Board of Directors and Bank Stability (H1)

Hypothesis 1 predicted that gender diversity on the board of directors would improve bank stability. Table 5 shows this hypothesis is not supported. The coefficient for BODW is positive (0.0976) but statistically insignificant (p = 0.4105). Having at least one woman on the board of directors shows no meaningful relationship with the Z-score. This result contradicts some prior research finding positive effects of board gender diversity on firm performance and stability.

Why might women's presence on boards not affect stability in Indonesian Islamic banks? Several explanations are possible. First, the critical mass theory suggests that token representation—having just one or two women among many men—produces symbolic rather than substantive influence. Women may attend meetings and vote, but they might not actually change how the board operates or what decisions get made. If other directors don't seriously consider their input or if women feel pressure to conform to majority views, their presence won't matter. Our dummy variable only captures whether women are present, not whether they're influential.

Second, the effectiveness of gender diversity may depend on organizational culture. If Indonesian Islamic banks have conservative corporate cultures that implicitly devalue women's contributions or limit their authority, then adding women to boards won't change outcomes. The banks might appoint women to satisfy regulatory pressure or appear progressive without actually empowering them to influence strategy. This would explain why we see women on 56% of boards but no stability effects.

Third, the women who do serve on Islamic bank boards might have similar backgrounds and perspectives to their male colleagues, limiting the diversity of thought. If selection processes favor women who think and act like traditional male directors, then gender diversity doesn't translate into cognitive diversity. The benefit of diversity comes from different perspectives, not just different demographics.

This finding aligns with Terjesen et al. (2015), who found that mandated gender quotas sometimes produce negative or neutral performance effects when implementation focuses on compliance rather than genuine integration. It's possible that Indonesian Islamic banks include women on boards to meet expectations without creating conditions for those women to actually improve governance.

Gender Diversity on Sharia Supervisory Board and Bank Stability (H2)

Hypothesis 2 predicted positive effects of gender diversity on sharia supervisory boards. Instead, we find a significant negative effect. The coefficient for SSBW is -0.5631 ($p = 0.0011$), meaning banks with at least one woman on the sharia board have Z-scores approximately 0.56 points lower than those without female sharia board members. This suggests women's presence on sharia supervisory boards correlates with reduced stability—exactly opposite our prediction.

This counterintuitive finding requires careful interpretation. The negative effect might not mean women hurt stability. Instead, it likely reflects the extremely limited number of women serving in sharia oversight roles. Only 11 out of 87 observations (12%)

have women on sharia boards. When female representation is this low, the women who do serve may face unique challenges that limit their effectiveness.

Tunyi et al. (2023) argue that women's impact on boards becomes meaningful only when there are at least three women serving together. With just one or two women, they face isolation and pressure to prove themselves, which can lead to either excessive conformity or being marginalized. In Islamic religious contexts specifically, women scholars may face additional barriers. Traditional interpretations of Islamic authority have historically privileged male religious leaders. Female sharia board members might struggle to assert their interpretations against senior male scholars, even when they're technically qualified.

Another possibility is adverse selection. The banks that do appoint women to sharia boards might be those facing other governance challenges that also affect stability. Perhaps banks experiencing problems become more willing to try unconventional approaches like appointing female religious scholars, creating a spurious correlation where women's presence signals underlying instability rather than causing it.

Educational Level Diversity on Board of Directors and Bank Stability (H3)

Hypothesis 3 predicted that educational level diversity—specifically having board members with doctoral degrees—would improve stability. The results contradict this prediction. BODPHD shows a negative and significant coefficient of -3.1555 ($p = 0.0042$). Each 10 percentage point increase in the proportion of PhD holders on the board of directors corresponds to a decrease of approximately 0.32 points in the Z-score. Having highly educated directors with doctoral credentials actually correlates with lower stability.

This surprising finding aligns with Marie et al. (2021), who also found negative effects of doctoral education on bank performance. Why might PhDs hurt stability in this context? The most plausible explanation involves risk-taking behavior. Directors with advanced academic training may have greater confidence in their analytical abilities, leading them to underestimate risks in complex strategies. PhDs are trained to value innovation and sophisticated solutions. In banking contexts, this might manifest as pursuing complicated financial products or aggressive expansion strategies that look promising in models but carry hidden risks.

Umar et al. (2024) suggest that highly educated board members may subscribe more strongly to risk-return tradeoff principles, believing that higher risks should yield higher returns. This theoretical framework might justify taking on substantial risks in pursuit of superior performance. Unlike directors with only practical business experience who might

be more cautious based on having seen deals go wrong, PhD holders might trust their analytical frameworks too much.

There's also the possibility that doctoral education creates a mismatch with organizational needs. Islamic banking in Indonesia requires practical knowledge of local markets, regulatory requirements, and customer preferences. PhDs often have theoretical training that doesn't directly translate to these practical challenges. A director who excels at academic research might actually be less effective at the operational judgment required for bank management. They might overcomplicate decisions or get stuck in analysis paralysis, unable to act decisively when situations demand quick practical judgment rather than extensive research.

The negative effect might also indicate that Indonesian Islamic banks appoint PhD holders for prestige rather than genuine expertise match. If banks add doctoral degree holders to boards to look sophisticated or impress regulators, without ensuring those PhDs have relevant knowledge for banking, then the credentials become meaningless or even counterproductive.

This finding has an important implication: educational credentials alone don't guarantee governance effectiveness. What matters is whether directors' knowledge actually matches organizational challenges. For Indonesian Islamic banks, practical banking experience might be more valuable than advanced academic training.

Educational Level Diversity on Sharia Supervisory Board and Bank Stability (H4)

Hypothesis 4 predicted positive effects of doctoral education on sharia supervisory boards. The results show no significant relationship. SSBPHD has a coefficient of -0.1144 ($p = 0.5899$), which is not statistically different from zero. The proportion of sharia board members with PhDs doesn't meaningfully relate to bank stability. This null result is interesting given that 54% of sharia board members hold doctoral degrees on average—far higher than the 2% for business boards. Several factors explain why advanced religious education does not influence stability.

First, doctoral degrees in Islamic jurisprudence may not translate into better governance for financial institutions. PhDs in religious studies provide deep knowledge of Islamic law and scholarly traditions, but this knowledge might not help much with the practical task of evaluating whether modern financial products are both Sharia-compliant and financially sound. A scholar with a doctorate in Islamic jurisprudence knows classical texts thoroughly but may lack understanding of how contemporary banking products

actually work or what risks they carry. Their expertise enables them to judge religious permissibility but not to assess financial prudence.

Second, most sharia boards are already composed primarily of PhD holders (average 54%), leaving little variation to detect effects. If nearly all sharia boards have roughly similar proportions of doctoral-educated members, then this variable can't explain why some banks are more stable than others. The lack of variation limits statistical power.

Third, the finding might reflect Pereira & Filipe's (2022) argument that highly qualified board members sometimes apply expertise for personal benefit rather than organizational good. Prominent religious scholars with PhDs might serve on multiple sharia boards simultaneously, spreading their attention thin. They might accept positions for prestige and fees without thoroughly engaging with each bank's operations. If doctoral education correlates with being busy and distracted, it wouldn't help stability.

This result suggests that having PhDs on sharia boards is neither helpful nor harmful for stability. What likely matters more is whether sharia board members—regardless of degree level—actually understand the financial products they're evaluating and engage seriously with their oversight responsibilities. A religious scholar with a master's degree who takes time to understand banking might contribute more than a PhD holder who provides superficial reviews.

Educational Specialization Diversity on Board of Directors and Bank Stability (H5)

Hypothesis 5 predicted that having more board directors with business-related educational backgrounds would improve stability. The results don't support this prediction. BODBUSS shows a negative coefficient of -0.3223, but it's not statistically significant ($p = 0.1702$). The proportion of directors with business degrees shows no meaningful relationship with stability.

This null finding is somewhat puzzling because business education seems obviously relevant for running a bank. Directors trained in accounting, finance, economics, and business administration should understand financial statements, risk management, and strategic planning better than those from other fields. This expertise does not translate into stability benefits for several reasons.

One explanation relates to the high baseline level of business education. Our descriptive statistics show that every bank has at least 25% of directors with business backgrounds, and the average is 69%. When nearly all boards are already dominated by business-educated directors, additional business expertise might not add much value. There

may be diminishing returns—the first few business-trained directors help a lot, but once you have several, adding more doesn't improve governance further.

Another possibility is that business degrees have become so common and standardized that they don't differentiate directors' capabilities much. Most business education provides generic training in management principles, but banking requires specialized knowledge. A director with an MBA knows general business concepts but might not understand the specific risks in Islamic finance or the Indonesian regulatory environment. The credential signals education but doesn't guarantee banking-specific expertise.

The finding from Sidki et al. (2024) supports this interpretation. They found that board members' educational backgrounds don't affect firm profitability in German state enterprises, suggesting that formal education may not translate into practical governance effectiveness. What matters more might be actual experience in banking, knowledge of the specific institution, or interpersonal skills for effective board deliberations—none of which are captured by measuring educational credentials.

For Indonesian Islamic banks specifically, success might require knowledge beyond standard business education. Directors need to understand Islamic finance principles, Indonesian cultural and regulatory contexts, and the competitive dynamics between Islamic and conventional banks. A business degree from a conventional university might not provide this specialized knowledge. This result reinforces the critique in our literature review: credentials don't automatically equal expertise. Having business degrees is practically universal on boards, making it useless for explaining variation in stability.

Educational Specialization Diversity on Sharia Supervisory Board and Bank Stability (H6)

Hypothesis 6 predicted positive effects of business education on sharia supervisory boards. This is the only hypothesis our data supports. SSBBUSS has a positive and significant coefficient of 0.8244 ($p = 0.0113$). Each 10 percentage point increase in the proportion of sharia board members with business backgrounds corresponds to an increase of approximately 0.08 points in Z-score. Having sharia supervisors who understand business helps bank stability.

This finding makes theoretical sense and has important practical implications. Traditional sharia boards consist primarily of Islamic scholars trained in religious jurisprudence. These scholars can judge whether banking products comply with Islamic law, but they might not understand the financial mechanics or risks involved. When sharia

boards include members who combine religious knowledge with business education, they can provide more sophisticated oversight. They can ask not just "Is this halal?" but also "Is this financially sound? What could go wrong? Are there hidden risks?"

Boadi et al. (2023) found that financial expertise on boards helps identify risks and prevent failures. Our results suggest this effect is particularly strong on sharia supervisory boards in Islamic banking. The combination of religious legitimacy and practical business understanding enables more effective governance than either type of expertise alone.

Think about how this works in practice. Suppose a bank wants to launch a new Islamic financial product—say, a profit-sharing investment account with a complicated structure. A traditional religious scholar can verify the product follows Sharia principles regarding profit-sharing and interest prohibition. But they might not recognize that the product's complexity could confuse customers, lead to misselling, create operational errors, or expose the bank to risks if market conditions change. A sharia board member with business training can spot these practical problems. They understand both the religious requirements and the financial implications.

This complementarity between religious and business expertise appears especially valuable for Islamic banking because these institutions must simultaneously satisfy two demanding standards: religious compliance and financial viability. Conventional banks only worry about financial performance. Islamic banks must also maintain religious legitimacy. Sharia boards with business expertise can bridge these two dimensions, preventing both religious violations that would damage reputation and financially imprudent decisions that would threaten solvency.

The positive effect is particularly notable because only 28.5% of sharia board members have business backgrounds on average. There's substantial room for improvement. If Islamic banks increased business education among sharia board members—perhaps by appointing scholars who studied both Islamic jurisprudence and finance, or by including retired Islamic bankers on sharia boards—stability should improve.

This finding provides the clearest practical guidance from our study: Islamic banks should prioritize appointing sharia supervisory board members who combine religious knowledge with business education. This isn't about replacing religious scholars with business people. It's about finding individuals who understand both domains or creating sharia boards that balance religious expertise with financial expertise.

Conclusion

This study examines how board diversity affects financial stability in Indonesian

Islamic banks. We tested three diversity types—gender, educational level, and educational specialization—across both boards of directors and sharia supervisory boards. The results challenge simple assumptions that diversity automatically helps organizations. Out of six hypotheses, only one received support: business education on sharia supervisory boards significantly improves stability. Gender diversity shows no effect on business boards and surprisingly shows negative effects on sharia boards, likely because token representation of just one or two women (only 12% of our sample) faces cultural barriers that prevent meaningful influence. Educational level diversity measured by PhD holders actually hurts stability on business boards, possibly because highly educated directors pursue overly complex or risky strategies. These mixed findings reveal that diversity effects depend heavily on context—the same diversity dimension produces different results depending on which board we examine and whether diverse members' expertise actually matches governance needs. The control variables add important insights: older banks are significantly more stable, suggesting organizational learning matters greatly, while larger banks are actually less stable, indicating that size and complexity create risks rather than providing safety.

For practical implications, Islamic banks should focus on building sharia supervisory boards that combine religious knowledge with business expertise. Currently only 28.5% of sharia board members have business backgrounds, leaving substantial room for improvement. Banks could appoint religious scholars who also studied finance, or include retired Islamic bankers with strong religious knowledge on sharia boards. This combination helps because sharia boards must judge both religious compliance and financial soundness—traditional religious scholars can determine if products follow Islamic law, but they may miss practical financial risks without business training. Regarding gender diversity, simply adding token women to boards won't help and might even signal underlying problems. Meaningful female participation requires appointing multiple women so they're not isolated, creating organizational cultures that value their contributions, and empowering them to actually influence decisions rather than just attending meetings. For educational credentials, banks should be cautious about assuming PhDs automatically improve governance. Our results suggest practical banking experience and sound judgment may matter more than prestigious academic degrees. Finally, the control variable findings indicate that Islamic banks should prioritize building organizational capabilities over rapid growth—stability comes from experience and learning, not just size.

Several limitations qualify these conclusions. Our sample covers only 13 Indonesian Islamic banks from 2015-2023, so results may not apply to other countries or time periods.

We measure diversity using simple indicators that capture whether diverse members are present but cannot assess whether they actually participate meaningfully in decisions. The small sample size limits statistical power, and our research design cannot definitively prove causation—board composition and stability might both be influenced by unmeasured factors like leadership quality or organizational culture. Future research should examine board processes rather than just demographics, investigate why certain diversity types help in specific contexts but not others, conduct comparative studies across countries, and use qualitative methods to understand how diversity actually operates in practice. Despite these limitations, this study demonstrates that board diversity's effects on Islamic banking stability are more nuanced than theories predict. Simply pursuing demographic diversity won't help unless banks match specific expertise to specific governance challenges and create conditions for diverse members to genuinely influence decisions.

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