
Unpacking the Role of Sharia Supervisory Boards and Islamic Political Connection in Driving Sustainability

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Abstract: This study empirically analyzes the influence of experience and education level of the Sharia Supervisory Board (SSB) on sustainability performance (SP), as well as the SSB's Islamic political connections (IPC) in moderating the influence of experience and education on SP in Islamic financial companies (IFCs). This study uses quantitative methods with the OLS regression technique supported by Minitab statistical applications. SP is measured using sustainability awards, and dummy variables measure SSBIPC. The results indicate that there is no influence of education level and length of SSB experience on supporting SP in IFCs. Islamic political connections are also unable to moderate the influence of experience and education of the SSB on SP. The experience, education, and Islamic political connections of the SSB are not always properly integrated into the practice of SP in Islamic governance. The practical implications suggest that IFCs should consider not only the level of education and experience but also the diversity of expertise, including in the ESG field, when selecting SSBs. The OJK needs to improve regulations regarding the requirements for becoming an SSB, so that they focus not only on education level and experience but also on the diversity of SSB expertise. This study contributes to the concept of maqashid Sharia, which the SSB should more practically implement. The originality of this research lies in the new measurements for sustainability performance variables by using the number of sustainability awards received by the company.

Keywords: Awards, Islamic financial companies, maqashid Sharia, SDGs, sharia supervisory board, sustainability performance.

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INTRODUCTION

The existence of the Sharia Supervisory Board (SSB) in Indonesia has been regulated through various policies and regulations set by the government. Financial companies offering Sharia products must have an SSB in their Good Corporate Governance (GCG) structure (Minister of Law and Human Rights, 2008; OJK, 2018). Few studies have empirically examined the implementation of these regulations to provide suggestions for regulators later. Various parties need to find out the effectiveness of the existence of the SSB as one of the Islamic GCG



structures required by regulation. The global world has also issued Sustainable Development Goals (SDGs) that are obligatory for all countries to implement. Islamic financial companies (IFCs), referring to maqashid Sharia, will certainly support SDGs. Determining how their existence affects the company's sustainability performance (SP) concerns companies and regulators.

Company performance is an important goal to achieve. Various parties with different interests can view company performance in financial and non-financial fields. Previous studies emphasized financial performance from the point of view of shareholders and company managers. Meanwhile, non-financial performance, one of which is SP from a wider stakeholder perspective, has not been widely studied. Previous studies show that non-financial measures can improve organizational performance in many cases. Efforts to detect which types of organizations will gain more from other non-financial measures have mixed results (Vollmer, 2019). One of the non-financial performances is SP. SP has evolved to require special attention from all organizations (Alonso-Martinez, De Marchi, & Di Maria, 2021; Nguyen, 2020). Sustainability includes an organization's economic, social, and environmental performance (Brennan, Subramaniam, & Van Staden, 2019). Prior studies still measure SP by the number of company disclosures in this area, such as the ESG index. Meanwhile, practical measurements, such as the number of awards received for programs and activities supporting corporate sustainability, have not been widely examined. Several factors, including the GCG structure's completeness and the presence of an SSB, support SP.

Previous literature shows that the relationship between GCG and company performance is still a matter of debate in empirical studies (Tjahjadi, Soewarno, & Mustikaningtiyas, 2021). Therefore, the influence of GCG on company performance has not yet shown conclusive results. From a different perspective, the maqashid sharia theory has certain objectives, such as educating individuals, upholding justice, and maintaining the public interest (Rahman, Tareq, Yunanda, & Mahdzir, 2017). In this theory, companies should not only focus on financial performance that benefits only shareholders and company managers, but also consider the employees' well-being, the environment, and society. Previous literature related to the influence of the SSB on company performance is still largely based on conventional theory, especially agency theory (Buallay & Al-Ajmi, 2020), stakeholder theory (Alam & Miah, 2021), legitimacy theory (Khan, Khan, Khan, Khan, & Rahman, 2021), and resource-based view theory (Ozdemir & Kilincarslan, 2021). The SSB is a council overseeing the IFCs in managing the business based on Islamic law. A concept based on Islamic theory is more relevant in discussing this study. Maqashid Sharia is used in this study to analyze the existence of the SSB, which is expected to support the IFCs in performing sustainability by seeking the blessings of Allah SWT.

This study focuses on one GCG structure, namely the SSB. The experience and education of the SSB are expected to drive the IFCs to improve SP. Prior research focusing on the SSB has successfully verified the influence of the SSB on financial and market performance despite inconsistent results. Some studies found a positive influence between the two variables (Abd Razak, 2020; Almutairi & Quttainah, 2019; Aslam & Haron, 2020; Isa & Lee, 2020; Khalil, Shuib, & Shahzad, 2020). Meanwhile, other studies present evidence of a negative effect (Aslam & Haron, 2020; Isa & Lee, 2020; Tahir & Ibrahim, 2020). There may even be results showing no influence between the two (Aassouli, Ebrahim, & Basiruddin, 2018; Ammer & Alsahlawi, 2019; Khalil & Taktak, 2020; Soelton, Ramli, Anggraini, & Khosasi, 2020; Tahir & Ibrahim, 2020). Meanwhile, research on the interaction of the SSB on SP has not been extensively studied. The previous literature review provides recommendations for empirical research on the association of the SSB with SP (Jan, Lai, & Tahir, 2021). The existence of gaps in previous research indicates the need for further study regarding the influence of the SSB on SP.

Considering the inconsistent results of previous research, this study includes a moderating variable, namely the Islamic political connection of the SSB. Political connection variables are commonly used in previous studies (He & Chen, 2022; Mohammed, Ahmed, & Ji, 2017; Momon, Wati, & Sutar, 2021; Niazi, Othman, & Chandren, 2021; Supatmi, Sutrisno, Saraswati, & Purnomosidhi, 2019). The SSB political connection is estimated to strengthen the influence of SSB's experience and education on SP. Many previous studies have been conducted on the role of political connections in moderating the relationship between family ownership and firm value (Harymawan, Nasih, Madyan, & Sucahyati, 2019; Momon et al., 2021). Other studies provide empirical evidence that political connections strengthen the influence of related party transactions on bank performance

(Supatmi et al., 2019) and weaken the association between GCG and accounting conservatism (Mohammed et al., 2017). Meanwhile, other research shows that there is no moderating effect of political connections on the influence of family ownership on company performance (Harymawan et al., 2019). In contrast, expatriate ownership successfully moderates GCG on company performance, with positive effects (Boachie, 2023). Previous research has not yet examined much of the moderating effect of IPC on IFCs, which is linked to the influence of SSB on SP.

This study examines IFCs listed on the Indonesia Stock Exchange (IDX). The relationship between Islamic GCG and SP still shows inconsistent results, so there is still room to debate this relationship in research. This study offers both theoretical and practical contributions. Theoretically, it challenges Islamic agency theory regarding the role of SSBs in corporate SP. Practically, it provides guidelines for IFCs in selecting SSB candidates for their companies. Higher education and extensive experience are not key factors for SSBs in supporting SP. An SSB's understanding of ESG and the diversity of expertise they possess are contributing factors. For regulators, specifically the Financial Services Authority (OJK), the results can serve as a basis for determining specific criteria for SSBs to sit on IFCs. However, education and experience, currently required for SSB registration, are not yet sufficient to support a company's SP.

THEORY AND HYPOTHESIS FORMULATION

Values and goals are considered objective and secret Sharia, determined by al-Shari' in every legal provision (Harisa, Adam, & Meutia, 2019). Al-Ghazali mentions five objectives of Sharia: 1. protect life, 2. protect intelligence, 3. protect offspring, 4. protect religion, and 5. protect property (Darus, Husin, Abidin, Khadzali, & Madan, 2024). Evaluation of Islamic Banks (IBs) performance with Maqashid Sharia principles mostly uses the Maqashid Sharia Index (MSI) approach (Mursyid, Kusuma, Tohirin, & Sriyana, 2021; Rahman et al., 2017; Widiastuti, Auwalin, Rani, & Ubaidillah Al Mustofa, 2021). Islam introduces nature's benefit, security, and well-being based on the teachings of maqashid al-sharia. Imam Ash-Syatibi explained five forms of maqasid Sharia, including protecting religion, soul, mind, property, and offspring (Hadi & Baihaqi, 2020). The sincerity of the Company's performance achievement is demonstrated by intentions and motives based on the integrated maqashid al-sharia principle. These principles can create a sincere, visionary, and sustainable entity, which not only protects the interests of the Company but also protects the interests of employees, society, consumers, and suppliers (Hadi & Mariana, 2018).

Not only knowledge and experience, but CEOs must also have the skills to plan and develop effective CSR programs (Skousen, Song, & Sun, 2018). The diversity of knowledge, experience, and skills of the board of directors is required by the Company for good corporate governance (Satrio, Yuhertiana, & Hamzah, 2016). Previous research also supports that SSBs' experience and knowledge of Sharia and banking can reduce communication problems (Kusuma & Ayumardani, 2016). SSB knowledge and experience can also be supported by cross-membership, which can ultimately improve IB's performance (Nomran, Haron, & Hassan, 2018). In addition, cross-membership can also improve Islamic perspectives, experience in handling complaints, and the quality of discussions of the SSBs (Mollah, Hassan, Al Farooque, & Mobarek, 2017). Sharia scholars from different backgrounds and experiences tend to solve similar problems in different ways, adding to the creativity of the Sharia board (Nomran & Haron, 2019). The presence of the ulama on the Sharia board positively impacts the performance and efficiency of the Sharia board, as it can increase the knowledge and experience of the ulama. This result can ultimately increase the productivity and efficiency of Islamic banks (Ozdemir & Kilincarslan, 2021). Therefore, the first hypothesis in this study is presented as follows:

H₁: The experience of the Sharia Supervisory Board positively affects sustainability performance.

Some previous studies found a positive effect of education and expertise on Islamic Banks (IBs) Sharia compliance. The SSB's educational level positively affects IB's performance (Almutairi & Quttainah, 2019). SSB education positively affects Sharia compliance at IBs (Tahir & Ibrahim, 2020). Roach and Slater (2016) argue that CEO characteristics, including educational background in the humanities, have a positive influence on their ability to make CSR policies. Educational diversity significantly and positively affects corporate CSR activities (Azam, Khalid, & Zia, 2019). Members of the SSB must have the academic qualifications necessary to properly

provide Sharia guidance, as it is essential in making a decision (Almutairi & Quttainah, 2017). SSB will become more innovative, competent in policy-making, and able to analyze cases as their education increases, which can ultimately lead to better performance (Almutairi & Quttainah, 2017).

SSB education in the fields of muamalah, fiqh, and Islamic finance is more necessary for IFCs to support company performance (Khan, Khan, Uddin, Khan, & Marwat, 2024). Malik, Akmaludin, and Asayesh (2024) stated that education is a key element reflecting board members' quality. Therefore, education positively impacts IB's performance (Rahmawati, Prawestri, Rosadi, & Wardani, 2024). Finally, Nomran et al. (2018) stated that company performance can be supported by SSB education. Therefore, the second hypothesis in this study is presented as follows:

H₂: The education of the Sharia Supervisory Board positively affects sustainability performance.

Politically connected companies are companies with political ties or proximity to certain politicians or Governments. However, political connections also hurt companies, besides the various benefits gained by politically connected companies. Research in Indonesia demonstrates the results of political connections in family companies improving company performance (Harymawan et al., 2019). Another stream of literature also drawing much attention from scholars is political connections in business. Previous studies have discovered that companies with political connections have multiple benefits (lower taxes, government procurement, licenses, access to finance, lower cost of debt, higher chances of being bailed out, fewer restrictions on entry into regulated industries, etc.) to favor their connected companies (Harymawan et al., 2019; Hung, Kim, & Li, 2018; Üçok Hughes, Upadhyaya, & Houston, 2018). Other studies also found a moderating effect of political connections on the influence of family businesses on company performance (Muttakin, Khan, & Mihret, 2018). Meanwhile, Niazi et al. (2021) explained that there is a lower cost of equity in companies with political connections.

Research conducted in Tiongkok found that companies connected to political parties performed better than those that were not (He & Chen, 2022) investigated the performance of firms owned by private entrepreneurs who are members of political parties in China. The finding supports the result that 28% of CEOs in 625 companies are current or former government officials (Harymawan et al., 2019; Momon et al., 2021). Politically connected companies often manage earnings by overstatement. Companies need political connections to achieve their goals and increase their value, especially in countries with the highest levels of corruption (Momon et al., 2021). Therefore, the third hypothesis in this study is presented as follows:

H_{3a}: The Sharia Supervisory Board's Islamic political connection moderates the influence of the Sharia Supervisory Board's experience on sustainability performance.

H_{3b}: The Sharia Supervisory Board's Islamic political connections moderate the influence of the Sharia Supervisory Board's education on sustainability performance.

RESEARCH METHODOLOGY

Quantitative methods were used in this study with secondary data obtained from the IDX website (www.idx.co.id). The role of experience, education, and Islamic political connections of the SSB on SP is formulated in 4 hypotheses. Based on the research hypothesis, the research equation for hypotheses 1 and 2 (H₁ and H₂) can be derived as follows:

$$SCSRAw = \alpha + \beta_1 SSBEx + \beta_2 SSBEd + \beta_3 BS + \beta_4 IB + \beta_5 FS + \beta_6 FA + \beta_7 Lev + \beta_8 In + \beta_9 Y + \varepsilon \quad (1)$$

Meanwhile, to examine the Islamic political connection in moderating the influence of SSB's experience and education on IFC's performance, it is formulated in hypotheses H_{3a} and H_{3b}. Based on these hypotheses, the following research equation can be drawn up:

$$SCSRAw = \alpha + \beta_1 SSBEx + \beta_2 SSBEd + \beta_3 SSBEx*SSBIPC + \beta_4 SSBEd*SSBIPC + \beta_5 BS + \beta_6 IB + \beta_7 CS + \beta_8 CA + \beta_9 Lev + \beta_{10} In + \beta_{11} Y + \varepsilon \quad (2)$$

The dependent variable in this study is SP, measured by the number of Sustainability and CSR Awards (SCSRAw) received by IFCs. The two independent variables are SSB's experience (SSBEx) and SSB's education (SSBEd). The moderating variable is the Islamic political connection of SSB (SSBIPC). Control variables include

Board Size (BS), Independent Board (IB), Firm Size (FS), Firm Age (FA), Leverage (Lev), Industry (In), and Year from 2015-2022 (Y).

This archival research takes secondary data from the IDX and the respective company websites. Annual report data for eight years, in the period 2015-2022. The population of this study is financial Companies (FCs) listed on IDX. One hundred-five companies operate in the FCs, with purposive sampling, of which 60 are IFCs. The criteria include Sharia products and the SSB in its GCG structure. The type of data sampled in this study is unbalanced panel data (data pool), with the criteria of containing complete data between the observation years 2015-2022. There is a different amount of data in the observation year. In 2015, 2016, 2021, and 2022, there were 55 IFCs per year. In 2019 and 2020, there were 59 IFCs each. Meanwhile, in 2017, there were 58 IFCs, and in 2018, there were 60 IFCs monitored in this study.

This study used a different measurement from previous studies in determining SP, as measured by the number of awards in the field of sustainability and CSR in the relevant year. SSB's experience is measured by the average number of years of experience as an SSB in any place. The education of the SSB is measured by the average value of the SSB's education on an ordinal scale: 4=Professor, 3=Doctor, 2=Master, 1=Bachelor. Islamic political connection is assessed using a nominative scale: 1=if the SSB is a member of an Islamic organization (Nahdatul Ulama (NU) or Muhammadiyah), 0=if not.

This study used Minitab for data analysis. The data were processed using the ordinary least squares (OLS) technique to test the effect of SSBEd and SSBEx on SCSRAw. The p-value was used to determine whether the hypothesis was accepted or rejected (Wilcox & Keselman, 2012). The degree of significance in hypothesis testing was accepted with a significance value of 1%, 5%, and a maximum of 10% according to the research topic, which falls into the category of social research (Gujarati & Porter, 2009). The final test carried out was the R2 test, which functioned to test the ability of SSBEd and SSBEx to explain the SCSRAw.

EMPIRICAL FINDINGS

Based on the data output from the Minitab application and the results of descriptive statistical tests.

Table 1: Basic statistics

Variables	N	Mean	St. Dev	Minimum	Median	Maximum
SCSRAw	452	1.150	2.343	0.000	0.000	17.000
SSBIPC	452	0.389	0.488	0.000	0.000	1.000
SSBEx	452	2.107	0.531	1.000	2.000	7.000
SSBEd	452	2.087	0.419	1.000	2.000	3.500
BS	452	12.555	4.567	6.000	11.000	31.000
IB	452	4.808	1.819	1.000	5.000	13.000
LnFS	452	9.961	1.987	4.205	10.100	15.441
FA	452	44.230	25.510	1.000	37.000	127.000
Lev	452	0.697	0.227	0.001	0.790	1.710
In	452	0.520	0.500	0.000	1.000	1.000
Y	452	4.471	2.248	1.000	4.000	8.000

According to Table 1, the average number of sustainability and CSR awards for IFCs listed on the IDX is 1.150 per year. There are 38.9% SSB connected to Islamic politics, meaning serving on the boards of Indonesia's largest Islamic community organizations, namely NU and Muhammadiyah. The average SSB has experience in the field for 2 years. At the same time, the average level of education is a Master's (S2). IFCs listed on IDX have an average board size of 12.555, rounded up to 13 people, of which 4.808, or rounded up to 5 people, are independent board members. The average natural log of IFCs' assets in Indonesia is 9.961, with the average age of the IFCs being 44.230 years. Meanwhile, IFCs in Indonesia have an average leverage of 0.697, where 52% of the companies sampled are IBs with an average observation period of 4.471 years.

Table 2: Correlation

	SCSRAw	SSBIPC	SSBEx	SSBEEd	BS	IB	LnFS	FA	Lev	In
SSBIPC	0.011									
SSBEx	-0.029	-0.012								
SSBEEd	-0.023	0.025	0.712							
BS	0.484	0.065	-0.112	-0.103						
IB	0.392	0.030	-0.066	-0.061	0.793					
LnFS	0.437	-0.005	-0.056	-0.062	0.646	0.504				
FA	0.354	-0.048	-0.071	-0.060	0.559	0.426	0.453			
Lev	0.151	-0.050	-0.063	-0.114	0.283	0.212	0.400	0.334		
In	0.243	0.104	-0.158	-0.149	0.412	0.427	0.583	0.311	0.173	
Y	0.176	0.026	0.104	0.066	0.079	0.042	0.096	0.093	-0.078	-0.019

Table 2 presents the correlation data, indicate that some variables are correlated, and others are uncorrelated. Furthermore, hypothesis testing is carried out as in Table 3.

Table 3: Hypothesis test

Term	Coef.	SE Coef.	T-Value	P-Value	VIF
Constant	-4.180	0.744	-5.620	0.000	
SSBEx	-0.064	0.307	-0.210	0.836	3.010
SSBEEd	0.119	0.389	0.310	0.760	2.990
BS	0.135	0.041	3.310	0.001***	3.920
IB	0.061	0.087	0.700	0.483	2.840
LnFS	0.265	0.075	3.550	0.000***	2.470
FA	0.009	0.005	1.960	0.050**	1.560
Lev	-0.402	0.472	-0.850	0.395	1.300
In	-0.174	0.243	-0.710	0.476	1.670
Y	0.124	0.0431	2.880	0.004***	1.060

Note: *** and ** indicate the level of significance at 1% and 5%, respectively

Based on Table 3, it clearly indicates that the experience and education level of the SSB do not affect SP. The control variables show a positive effect of the number of boards, firm size, firm age, and year of observation on SP. Meanwhile, the independent board, leverage, and type of industry do not affect SP. The VIF value < 10 indicates no multicollinearity problem in this study model.

Table 4: R Square test

S	R-sq	R-sq(adj)	R-sq(pred)	Durbin-Watson
2.001	28.52%	27.07%	24.18%	2.073

The text indicates that Table 4 shows a 27.07% feasibility of the research model, with 27% of SP affected by examined variables. The Durbin-Watson value below 3 suggests no autocorrelation. The SSBIPC moderation model involving SSBEEd and SSBEx is explained in the research equation and Table 5.

Table 5: Moderation hypothesis test

Term	Coef.	SE Coef.	T-Value	P-Value	VIF
Constant	-3.787	0.598	-6.340	0.000	
SSBEx*SSBIPC	-0.001	0.007	-0.110	0.910	9.370
SSBEd*SSBIPC	-0.003	0.007	-0.460	0.648	9.340
BS	0.130	0.041	3.210	0.001***	3.890
IB	0.051	0.087	0.580	0.562	2.850
LnFS	0.278	0.074	3.730	0.000***	2.470
FA	0.008	0.005	1.700	0.089*	1.600
Lev	-0.394	0.468	-0.840	0.400	1.280
In	-0.183	0.240	-0.760	0.445	1.630
Y	0.128	0.043	2.980	0.003***	1.060

Note: ***, and * indicate the level of significance at 1%, and 10% respectively

Based on the table results above, it is clear that the political connections of the SSB cannot moderate or strengthen the relationship between the experience and education level of the SSB on SP. According to the values above, the p-value is increasing, and the coefficient value is decreasing. This indicates that the SSB connected to Islamic politics weakens the influence of the experience and education of the SSB on SP. The results of this study also provide empirical evidence of the positive influence of control variables: the number of board members, firm age, firm size, and years of observation on SP. Meanwhile, independent board, leverage, and industry type do not affect SP. The VIF value <10 means this study model has no multicollinearity problem.

Table 6: Moderation R-Square test

S	R-sq	R-sq(adj)	R-sq(pred)	Durbin-Watson
1.995	28.94%	27.49%	24.81%	2.076

Table 6 shows that the feasibility of the SSBIPC moderation model is 27.49%. This value means 27.49% of SP is affected by the variables examined in this study, and other variables cause the rest. The Durbin-Watson value represents a value of < 3, indicating no autocorrelation problem.

DISCUSSIONS

Empirical evidence shows no influence of SSB's experience on SP in IFCs. The primary role of the SSB is to ensure IFC's financial products and practices comply with Sharia principles, focusing on the prohibition of riba (interest), gharar (uncertainty), and other prohibited elements (Mollah & Zaman, 2015). This role is primarily compliance-oriented, meaning ethical behavior is emphasized; it may not necessarily include a focus on broader environmental or social sustainability outcomes (Hassan, Sohail, & Munshi, 2022). Maqasid al-Sharia's theory outlines five important objectives - protecting faith, life, intellect, offspring, and wealth - that guide individuals and organizations toward overall well-being (Budiman, Febrian, & Azis, 2022). These goals support societal well-being and ethical considerations but do not directly mandate specific sustainability actions, especially in modern environmental or social contexts (Prakitsuwan & Moschis, 2021). The SSB is consultative, providing advice on Sharia compliance rather than setting strategic priorities or enforcing implementation (Muhammad, Annur, Taufik, & Nugraheni, 2021). In contrast, the responsibility for strategic decisions on sustainability commonly lies with the executive board or senior management, who may prioritize short-term financial goals over broader social or environmental impacts (Shahwan & Fathalla, 2020).

The SSB is predominantly assigned to keeping an eye on the financial legitimacy and ethics of business activities in line with Islamic principles, with a focus on halal (permissible) and haram (prohibited) business

practices (Alam & Miah, 2021). However, SP requires a separate set of metrics covering environmental protection, social equality, and economic development, areas typically outside the scope of traditional SSB reviews (Hummel, Laun, & Krauss, 2021). Despite maqasid's emphasis on social well-being and justice, implementing these broad values into specific and measurable corporate sustainability actions is complex without additional frameworks such as ESG criteria (Budiman et al., 2022). Interpretations of maqasid al-Sharia can vary significantly among academics and practitioners, especially regarding how these principles are applied to corporate behavior (Mursyid et al., 2021).

This study also provides empirical evidence that there is no influence of SSB Education on SP. Sharia education for SSB members usually focuses on Islamic finance principles, emphasizing financial ethics, prohibition of usury (interest), and guidelines on permissible business activities (Toumi, 2020). Therefore, the training and education are oriented toward financial compliance rather than the holistic, interdisciplinary understanding required for SP (Hassan et al., 2022). Despite maqasid al-Sharia advocating general prosperity, justice, and ethical behavior through its core objectives (preservation of life, intellect, wealth, faith, and posterity), it does not explicitly direct actions towards modern sustainability measures such as environmental conservation and social equality (Darus et al., 2024). The role of the SSB is generally advisory, focusing on ensuring Sharia compliance in financial products rather than directly shaping operational or strategic sustainability goals (Rahman et al., 2017). Members of the SSB familiar with the broad maqasid principles perceive their influence to be limited, as decisions related to SP are usually handled by senior management or the IFC's board (Khan et al., 2024).

Sharia education frequently focuses on classical Islamic jurisprudence, stressing compliance in finance and commerce without focusing on modern sustainability issues such as climate change, resource management, or social responsibility (Alam & Miah, 2021). For members of the SSB, this educational background typically does not cover ESG factors or specific sustainability standards; it also does not provide them with the necessary technical expertise to directly influence corporate sustainability outcomes (Budiman et al., 2022). Maqasid al-Sharia supports ethical business behavior, yet translating these values into corporate sustainability requires knowledge and practical tools not usually provided by Sharia education (Hudaefi & Badeges, 2022). Various educational institutions and academics interpret the principles of maqasid al-Sharia with different emphases, some focusing on compliance with Islamic ethics and others focusing on promoting social justice (Buallay, 2019).

In this study, political connections did not successfully moderate or strengthen the effect of the experience of the SSB on SP. SSB has the main task of ensuring that Sharia law is implemented in the IFCs, which also includes the prohibition of *riba* (interest), *haram* (forbidden), and *gharar* (uncertainty) (Abd Razak, 2020). While important for ethical oversight, this compliance role does not inherently prioritize sustainability or environmental performance (Budiman et al., 2022). Maqasid al-Sharia centers on achieving human well-being by safeguarding life, reason, wealth, faith, and posterity (Darus et al., 2024). These principles provide a general ethical foundation supporting sustainability goals in theory but not necessarily guiding specific corporate actions related to environmental protection or social justice (Haridan, Hassan, & Karbhari, 2018). The political connections of SSB members, although present, may not be able to bridge this gap effectively, as the maqasid principles require a concrete and actionable framework for modern sustainability issues, a focus beyond the typical mandate of the SSB (Khan et al., 2024).

Politically connected members of the SSB can leverage this connection to strengthen the social legitimacy of the organization or obtain beneficial regulations. However, these political networks are often used to strengthen financial and operational stability rather than advocating for environmental or social performance (Shahwan & Fathalla, 2020). The SSB serves an advisory role, primarily focusing on Sharia compliance rather than setting strategic sustainability goals (Muhammad et al., 2021). Primary responsibility for sustainability decisions usually lies with the executive or management board, as it may prioritize financial performance over sustainability, regardless of the political influence of SSB members (Abd Razak, 2020). Political networks frequently operate based on different objectives, such as economic development, financial growth, and social stability, rather than corporate sustainability (Mursyid et al., 2021). Political connections can hinder sustainability if they push organizations toward growth at the expense of environmental impacts

(Hummel et al., 2021). Despite maqasid al-Sharia's promotion of well-being and justice, its principles alone do not provide a direct framework for IFCs' sustainability. Politically connected members of SSB can advocate for policies aligned with maqasid values. However, their influence remains limited without specific tools to translate these principles into measurable sustainability metrics (Khan et al., 2024).

This study provides empirical evidence of the inability of SSB's political connections to strengthen the influence of SSB's education on SP. Education for SSB members is typically centered on Islamic jurisprudence, mainly focusing on financial compliance in areas such as *riba* (interest), *gharar* (uncertainty), and ethical investment principles (Abd Razak, 2020). SSB education, which is mostly in the field of Sharia law, still does not include knowledge related to (Environment, Social, Governance) ESG, which is important for the Company's sustainable performance (Budiman et al., 2022). Maqasid al-Sharia principles focus on human prosperity, justice, and development by protecting faith, life, intellect, lineage, and wealth (Darus et al., 2024). Political connections may strengthen the SSB's influence on financial and regulatory compliance but have limited utility in advancing corporate environmental and social sustainability (Khan et al., 2024). SSBs are typically advisory, focusing on ensuring Sharia compliance rather than setting strategic sustainability goals (Muhammad et al., 2021). The SSB's role in advising on Sharia compliance does not extend to making operational or strategic decisions related to sustainability, which usually falls under the purview of the executive board or senior management (Shahwan & Fathalla, 2020).

Political connections are frequently leveraged to gain regulatory support, financial stability, or favorable policy conditions, typically prioritizing short-term economic growth over long-term sustainability (Mursyid et al., 2021). Although SSB members have a strong educational background in maqasid al-Sharia, their political networks may not align with or support sustainability-related initiatives, limiting the impact of their education on corporate SP (Hummel et al., 2021). Despite focusing on ethics and compliance, traditional Sharia education does not cover the technical or interdisciplinary skills required to engage in effective sustainability initiatives (Khan et al., 2024). Interpretations of Maqasid al-Sharia vary among educational institutions and scholars, leading to differences in how SSB members understand the role of Sharia in corporate governance (Mursyid et al., 2021).

CONCLUSION

This study shows that there is no influence of education level and length of SSB experience on supporting SP in IFCs. Islamic political connections are also unable to moderate the influence of experience and education of the SSB on SP. The experience, education, and Islamic political connections of the SSB are not always properly integrated into the practice of SP in Islamic governance. Without effective coordination between these three factors, their contribution to SP can be negligible. Without a clear strategy and integration of experience, education, and political support, these three factors may not significantly influence sustainability achievement. Even though experience, education, and Islamic political connections are frequently considered to contribute to SP, there is an argument to suggest these factors do not necessarily contribute significantly. Experience and education may not always be relevant or practical for SP, and political connections may not provide direct or effective support in implementing sustainability policies. Therefore, achieving SP may depend more on practical implementation, internal policies, and integrated strategies than on these factors separately.

This research provides theoretical implications for the understanding of the Maqashid Sharia theory by the SSB, which is not sufficient without full authority, active initiative, and understanding of the SSB regarding sustainability issues to support the Sharia objectives of educating individuals, implementing justice, and maintaining benefits, especially those related to the IFCs on duty. Practically, the results of this study have implications for the SSB criteria for IFCs listed on the IDX. The level of education, length of experience in the SSB, and Islamic political connections of the SSB are not essential to support SP. IFCs can provide other criteria, such as expertise and experience in finance-related fields, to support the IFC's SP. Recommendations to policymakers include establishing appropriate criteria for selecting prospective candidates for the SSB to be assigned to IFCs based on their ability to support the SP. There is also a need to provide sustainability education through training for the SSB to better understand sustainability issues.

This study has limitations due to a relatively high VIF value, although it remains within reasonable limits; this suggests potential multicollinearity for moderating effects. Future research could identify other SSB supporting factors that might enhance the IFC's SP. Factors such as expertise, financial experience, number of relevant meetings, or fatwas issued by the SSB may support SP. Empirical studies are necessary to establish an appropriate model for Islamic governance. Many opportunities for further research in this area remain unexplored. Additional mediating and moderating variables are also needed to develop a more comprehensive research model, serving as a guideline for IFCs in implementing Islamic governance within their organizations.

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REFERENCES

- Aassouli, D., Ebrahim, M.-S., & Basiruddin, R. (2018). Can UGITs promote liquidity management and sustainable development? *ISRA International Journal of Islamic Finance*, 10(2), 126-142. <https://doi.org/10.1108/IJIF-12-2017-0055>
- Abd Razak, A. H. (2020). Multiple Sharia' board directorship: A Maslahah (public interest) perspective. *Journal of Islamic Marketing*, 11(3), 745-764. <https://doi.org/10.1108/JIMA-10-2018-0185>
- 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>
- Almutairi, A. R., & Quttainah, M. A. (2017). Corporate governance: Evidence from Islamic banks. *Social Responsibility Journal*, 13(3), 601-624. <https://doi.org/10.1108/SRJ-05-2016-0061>
- Almutairi, A. R., & Quttainah, M. A. (2019). Corporate governance and accounting conservatism in Islamic banks. *Thunderbird International Business Review*, 61(5), 745-764. <https://doi.org/10.1002/tie.22063>
- Alonso-Martinez, D., De Marchi, V., & Di Maria, E. (2021). The sustainability performances of sustainable business models. *Journal of Cleaner Production*, 323, 129145. <https://doi.org/10.1016/j.jclepro.2021.129145>
- Ammer, M. A., & Alsahlawi, A. M. (2019). An empirical investigation into the impact of Shari'ah-compliant status and Muslim directorship on the accuracy of IPO management earnings forecasts. *International Journal of Islamic and Middle Eastern Finance and Management*, 12(1), 56-75. <https://doi.org/10.1108/IMEFM-07-2017-0174>
- Aslam, E., & Haron, R. (2020). Does corporate governance affect the performance of Islamic banks? New insight into Islamic countries. *Corporate Governance: The International Journal of Business in Society*, 20(6), 1073-1090. <https://doi.org/10.1108/CG-11-2019-0350>
- Azam, M., Khalid, M. U., & Zia, S. Z. (2019). Board diversity and corporate social responsibility: The moderating role of Shariah compliance. *Corporate Governance: The International Journal of Business in Society*, 19(6), 1274-1288. <https://doi.org/10.1108/CG-01-2019-0022>
- Boachie, C. (2023). Corporate governance and financial performance of banks in Ghana: The moderating role of ownership structure. *International Journal of Emerging Markets*, 18(3), 607-632. <https://doi.org/10.1108/IJOEM-09-2020-1146>
- Brennan, N. M., Subramaniam, N., & Van Staden, C. J. (2019). Corporate governance implications of disruptive technology: An overview. *The British Accounting Review*, 51(6), 100860. <https://doi.org/10.1016/j.bar.2019.100860>
- Buallay, A. (2019). Corporate governance, Sharia'ah governance and performance: A cross-country comparison in MENA region. *International Journal of Islamic and Middle Eastern Finance and Management*, 12(2), 216-235. <https://doi.org/10.1108/IMEFM-07-2017-0172>
- Buallay, A., & Al-Ajmi, J. (2020). The role of audit committee attributes in corporate sustainability reporting: Evidence from banks in the Gulf Cooperation Council. *Journal of Applied Accounting Research*, 21(2), 249-264. <https://doi.org/10.1108/JAAR-06-2018-0085>
- Budiman, T., Febrian, E., & Azis, Y. (2022). The effect of geographical factors on Islamic banking sustainability performance: An instrumental variable quantile regression analysis. *Asian Economic and Financial Review*, 12(2), 70-88. <https://doi.org/10.18488/5002.v12i2.4411>
- Darus, M., Husin, N. K. M., Abidin, N. H. Z., Khadzali, N. R., & Madan, M. (2024). Ethical governance through Maqasid Shariah perspective: A conceptual framework. *International Journal of Academic Research in Business and Social Sciences*, 14(10), 920-932.
- Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics*. United States: The McGraw-Hill.
- Hadi, N., & Baihaqi, J. (2020). The motive of CSR practices in Indonesia: Maqasid al-Sharia review. *Qudus International Journal of Islamic Studies*, 8(2), 327-352. <https://doi.org/10.21043/qjijis.v8i2.8856>

- Hadi, N., & Mariana, E. (2018). Measuring corporate social responsibility performance for employees with an NH approach method. *Iqtishadia: Jurnal Kajian Ekonomi dan Bisnis Islam*, 11(2), 243-263.
- Haridan, N. M., Hassan, A. F. S., & Karbhari, Y. (2018). Governance, religious assurance and Islamic banks: Do Shariah boards effectively serve? *Journal of Management and Governance*, 22(4), 1015-1043. <https://doi.org/10.1007/s10997-018-9418-8>
- Harisa, E., Adam, M., & Meutia, I. (2019). Effect of quality of good corporate governance disclosure, leverage and firm size on profitability of Islamic commercial banks. *International Journal of Economics and Financial Issues*, 9(4), 189-196. <https://doi.org/10.32479/ijefi.8157>
- Harymawan, I., Nasih, M., Madyan, M., & Sucahyati, D. (2019). The role of political connections on family firms' performance: Evidence from Indonesia. *International Journal of Financial Studies*, 7(4), 55. <https://doi.org/10.3390/ijfs7040055>
- Hassan, A., Sohail, M. S., & Munshi, M. M. R. (2022). Shari'ah governance and agency dynamics of Islamic banking operations in the Kingdom of Saudi Arabia. *ISRA International Journal of Islamic Finance*, 14(1), 89-106. <https://doi.org/10.1108/IJIF-12-2020-0252>
- He, X., & Chen, A. (2022). Impact of Chinese firms' political connections on EVA performance: The moderating roles of connection heterogeneity and product diversification. *Chinese Management Studies*, 16(1), 211-230. <https://doi.org/10.1108/CMS-09-2020-0377>
- Hudaefi, F. A., & Badeges, A. M. (2022). Maqāshid al-Sharī 'ah on Islamic banking performance in Indonesia: A knowledge discovery via text mining. *Journal of Islamic Marketing*, 13(10), 2069-2089. <https://doi.org/10.1108/JIMA-03-2020-0081>
- Hummel, K., Laun, U., & Krauss, A. (2021). Management of environmental and social risks and topics in the banking sector-An empirical investigation. *The British Accounting Review*, 53(1), 100921. <https://doi.org/10.1016/j.bar.2020.100921>
- Hung, M., Kim, Y., & Li, S. (2018). Political connections and voluntary disclosure: Evidence from around the world. *Journal of International Business Studies*, 49(3), 272-302. <https://doi.org/10.1057/s41267-017-0139-z>
- Isa, M., & Lee, S.-P. (2020). Does the Shariah committee influence risk-taking and performance of Islamic banks in Malaysia? *Journal of Islamic Accounting and Business Research*, 11(9), 1739-1755. <https://doi.org/10.1108/JIABR-12-2018-0207>
- Jan, A. A., Lai, F.-W., & Tahir, M. (2021). Developing an Islamic Corporate Governance framework to examine sustainability performance in Islamic banks and financial institutions. *Journal of Cleaner Production*, 315, 128099. <https://doi.org/10.1016/j.jclepro.2021.128099>
- Khalil, A., & Taktak, B. N. (2020). The impact of the Shariah Board's characteristics on the financial soundness of Islamic banks. *Journal of Islamic Accounting and Business Research*, 11(10), 1807-1825. <https://doi.org/10.1108/JIABR-08-2018-0127>
- Khalil, R., Shuib, S. B., & Shahzad, A. (2020). Corporate governance indicators and firm value: Evidence of sharia compliant firms from Pakistan. *Paradigms*, 13(2), 182-190.
- Khan, A., Khan, M. Y., Khan, A. Q., Khan, M. J., & Rahman, Z. U. (2021). Testing the weak form of efficient market hypothesis for socially responsible and Shariah indexes in the USA. *Journal of Islamic Accounting and Business Research*, 12(5), 625-645. <https://doi.org/10.1108/JIABR-02-2020-0055>
- 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>
- Kusuma, H., & Ayumardani, A. (2016). The corporate governance efficiency and Islamic bank performance: An Indonesian evidence. *Polish Journal of Management Studies*, 13(1), 111-120.
- Malik, H. B., Akmaludin, I., & Asayesh, H. (2024). The influence of Sharia supervisory board characteristics on the financial performance of Islamic banks. *Journal of Islamic Economics Perspectives*, 6(1), 24-46. <https://doi.org/10.35719/ijep.v6i1.150>
- Minister of Law and Human Rights. (2008). Law No. 21 of 2008 concerning Islamic banking. In *State Gazette of the Republic of Indonesia*. Indonesia: Minister of Law and Human Rights.
- Mohammed, N. F., Ahmed, K., & Ji, X.-D. (2017). Accounting conservatism, corporate governance and political connections. *Asian Review of Accounting*, 25(2), 288-318. <https://doi.org/10.1108/ARA-04-2016-0041>
- Mollah, S., Hassan, M. K., Al Farooque, O., & Mobarek, A. (2017). The governance, risk-taking, and performance of Islamic banks. *Journal of Financial Services Research*, 51(2), 195-219. <https://doi.org/10.1007/s10693-016-0245-2>
- Mollah, S., & Zaman, M. (2015). Shari'ah supervision, corporate governance and performance: Conventional vs. Islamic banks. *Journal of Banking & Finance*, 58, 418-435. <https://doi.org/10.1016/j.jbankfin.2015.04.030>
- Momon, Wati, L. N., & Sutar. (2021). The role of political connections and family ownership in increasing firm value. *ACRN Journal of Finance and Risk Perspectives*, 10, 40-53. <https://doi.org/10.35944/jofrp.2021.10.1.003>
- Muhammad, R., Annuar, A. H., Taufik, M., & Nugraheni, P. (2021). The influence of the SSB's characteristics toward Sharia compliance of Islamic banks. *Cogent Business & Management*, 8(1), 1929033. <https://doi.org/10.1080/23311975.2021.1929033>
- Mursyid, M., Kusuma, H., Tohirin, A., & Sriyana, J. (2021). Performance analysis of Islamic banks in Indonesia: The Maqashid Shariah approach. *The Journal of Asian Finance, Economics and Business*, 8(3), 307-318. <https://doi.org/10.13106/jafeb.2021.vol8.no3.0307>
- Muttakin, M. B., Khan, A., & Mihret, D. G. (2018). The effect of board capital and CEO power on corporate social responsibility disclosures. *Journal of Business Ethics*, 150(1), 41-56. <https://doi.org/10.1007/s10551-016-3105-y>
- Nguyen, T. T. D. (2020). An empirical study on the impact of sustainability reporting on firm value. *Journal of Competitiveness*, 12(3), 119-135. <https://doi.org/10.7441/joc.2020.03.07>
- Niazi, M. M., Othman, Z., & Chandren, S. (2021). The moderating role of director's financial expertise in political connections and corporate financial performance in Pakistan. *Accounting*, 7(4), 865-874. <https://doi.org/10.5267/j.ac.2021.1.022>

- Nomran, N. M., & Haron, R. (2019). Dual board governance structure and multi-bank performance: A comparative analysis between Islamic banks in Southeast Asia and GCC countries. *Corporate Governance: The International Journal of Business in Society*, 19(6), 1377-1402. <https://doi.org/10.1108/CG-10-2018-0329>
- Nomran, N. M., Haron, R., & Hassan, R. (2018). Shari'ah supervisory board characteristics effects on Islamic banks' performance: Evidence from Malaysia. *International Journal of Bank Marketing*, 36(2), 290-304. <https://doi.org/10.1108/IJBM-12-2016-0197>
- OJK. (2018). *Financial services authority Regulation No. 24/POJK:03/2018 concerning the implementation of governance for Islamic rural financing banks. In the State Gazette of the Republic of Indonesia*. Indonesia: OJK.
- Ozdemir, O., & Kilincarslan, E. (2021). The governance role of shareholders and board of directors on firm performance: An eclectic governance-performance model. *International Journal of Accounting & Information Management*, 29(4), 493-527. <https://doi.org/10.1108/IJAIM-10-2020-0172>
- Prakitsuwan, P., & Moschis, G. P. (2021). Well-being in later life: A life course perspective. *Journal of Services Marketing*, 35(1), 131-143. <https://doi.org/10.1108/JSM-08-2019-0316>
- Rahman, F. K., Tareq, M. A., Yunanda, R. A., & Mahdzir, A. (2017). Maqashid Al-Shari'ah-based performance measurement for the halal industry. *Humanomics*, 33(3), 357-370. <https://doi.org/10.1108/H-03-2017-0054>
- Rahmawati, A. I. E., Prawestri, A. D., Rosadi, S., & Wardani, M. K. (2024). Enhancing Islamic bank performance : The role of Sharia supervisory board attributes and intellectual capital. *JAS (Jurnal Akuntansi Syariah)*, 8(2), 203-226. <https://doi.org/10.46367/jas.v8i2.1943>
- Roach, C. P., & Slater, D. J. (2016). To make us truly human: Humanities education and corporate social responsibility. *Journal of Global Responsibility*, 7(2), 181-195. <https://doi.org/10.1108/JGR-05-2016-0014>
- Satrio, M. D., Yuhertiana, I., & Hamzah, A. (2016). Implementation of accrual-based government accounting standards in Jombang Regency. *Jurnal Akuntansi Dan Keuangan*, 18(1), 59-70.
- Shahwan, T. M., & Fathalla, M. M. (2020). The mediating role of intellectual capital in corporate governance and the corporate performance relationship. *International Journal of Ethics and Systems*, 36(4), 531-561. <https://doi.org/10.1108/IJOES-03-2020-0022>
- Skousen, C. J., Song, X. J., & Sun, L. (2018). CEO network centrality and bond ratings. *Advances in Accounting*, 40, 42-60. <https://doi.org/10.1016/j.adiac.2017.12.003>
- Soelton, M., Ramli, Y., Anggraini, D., & Khosasi, D. (2020). Implementing good corporate governance to engage corporate social responsibility in financial performance. *European Research Studies Journal*, 23(1), 239-258.
- Supatmi, S., Sutrisno, T., Saraswati, E., & Purnomosidhi, B. (2019). The effect of related party transactions on firm performance: The moderating role of political connection in Indonesian banking. *Business: Theory and Practice*, 20(1), 81-92. <https://doi.org/10.3846/btp.2019.08>
- Tahir, M., & Ibrahim, S. (2020). The performance of Shariah-compliant companies during and after the recession period—evidence from companies listed on the FTSE All World Index. *Journal of Islamic Accounting and Business Research*, 11(3), 573-587. <https://doi.org/10.1108/JIABR-07-2016-0082>
- Tjahjadi, B., Soewarno, N., & Mustikaningtiyas, F. (2021). Good corporate governance and corporate sustainability performance in Indonesia: A triple bottom line approach. *Heliyon*, 7(3), e06453. <https://doi.org/10.1016/j.heliyon.2021.e06453>
- Toumi, K. (2020). Islamic ethics, capital structure and profitability of banks; what makes Islamic banks different? *International Journal of Islamic and Middle Eastern Finance and Management*, 13(1), 116-134. <https://doi.org/10.1108/IMEFM-05-2016-0061>
- Üçok Hughes, M., Upadhyaya, S., & Houston, R. (2018). Educating future corporate managers for a sustainable world: Recommendations for a paradigm shift in business education. *On the Horizon*, 26(3), 194-205. <https://doi.org/10.1108/OTH-01-2018-0007>
- Vollmer, H. (2019). Accounting for tacit coordination: The passing of accounts and the broader case for accounting theory. *Accounting, Organizations and Society*, 73, 15-34. <https://doi.org/10.1016/j.aos.2018.06.003>
- Widiastuti, T., Auwalin, I., Rani, L. N., & Ubaidillah Al Mustofa, M. (2021). A mediating effect of business growth on zakat empowerment program and Mustahiq's welfare. *Cogent Business & Management*, 8(1), 1882039. <https://doi.org/10.1080/23311975.2021.1882039>
- Wilcox, R. R., & Keselman, H. J. (2012). Modern regression methods that can substantially increase power and provide a more accurate understanding of associations. *European Journal of Personality*, 26(3), 165-174. <https://doi.org/10.1002/per.860>