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Corporate governance and Islamic bank accountability based on disclosure—a study on Islamic banks in Indonesia

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Abstract: Shariah principles used as the primary basis for bank operations emphasize information disclosure as manager accountability to stakeholders. This form of accountability can be presented by presenting broader information disclosure, i.e., the disclosure of information on social, finance, and shariah compliance performance. We expand the disclosure, which is not limited to the disclosure of Corporate Social Responsibility (CSR). This study aims to examine the effect of the Board of Directors (BOD) and Shariah Supervisory Board (SSB) on financial, social, and shariah disclosure. The sample of this study is Islamic commercial banks in Indonesia, totaling 14 banks with an observation period of 11 years (2010–2020). The content analysis measured disclosure data and further analyzed using the fixed effect or random effect and the generalized method of moments (GMM) to

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PUBLIC INTEREST STATEMENT

Islamic banks (IB) have different operating systems from conventional banks. Deposit products run by IB with a profit and loss sharing (PLS) system have the consequence of sharing profits between depositors and IBs. The potential risks faced by IB depositors are ideally accompanied by broader performance disclosures. This study is based on three pillars of disclosure: disclosure of financial performance, social performance, and shariah compliance. The study investigated the role of the board of directors (BOD)' attributes and the Shariah Supervisory Board (SSB)'s attributes on these three disclosures. The study found that BOD and SSB education in finance/accounting can improve disclosure. However, the number of SSBs can reduce disclosure. The BOD and SSB play a more significant role than others in increasing shariah disclosure regarding sub-disclosure. This study encourages regulators to encourage the effectiveness of BOD and SSB by increasing the number of members at a certain level and encouraging banks to choose BOD and SSB members who have an educational background in finance/accounting.

overcome the endogeneity problem. We found that BOD and SSB education in finance/accounting can improve disclosure. However, the number of SSBs can reduce disclosure. The BOD and SSB play a more significant role than others in increasing shariah disclosure regarding sub-disclosure. The implication of this study is the importance of financial/accounting expertise for a BOD and SSB that will impact performance effectiveness and subsequently reduce information asymmetry.

Subjects: Corporate Finance; Business, Management and Accounting; Accounting; Corporate Governance

Keywords: Islamic accountability; shariah disclosure; shariah board

1. Introduction

Islamic banks have different principles, operations, governance, and objectives (Aracil, 2019; Brown et al., 2007). These differences arise because Islamic banks use shariah, which must be obeyed in all their institutional operations. The spirit of shariah is the avoidance of interest, *gharar*, and *maysir* transactions and the creation of economic justice and the welfare of the entire community and its environment. Avoidance of interest transactions aims to create justice and distribution of wealth to reduce poverty (Aracil, 2019). Another Islamic spirit emphasized in Islam is managing the *amanah* (trust).

In complex business operations, there is a separation between the owner and the manager where the owner entrusts their assets to be managed by the manager. Islam views responsibility broadly regarding horizontal and vertical accountability (accountability to God). Accountability is in the form of disclosing all information needed to provide information to the *umma* (Islamic community) about the company's operations. Stakeholders have the right to know how organizations that are part of stakeholders affect their welfare (Maali et al., 2006).

One form of disclosure that has been widely studied is social performance disclosure. Islamic banks are encouraged to have greater social awareness than conventional banks are. There are many verses in the Qur'an relating to social and environmental concerns (Helfaya et al., 2016; Rizk, 2014). In Islam, there are concepts of *hablummin Allah* (relationship with God) and *hablum minnas* (relationship with humans) which translate into a Muslim must have good relations with Allah and good relations with people. Another concept is *khalifah fil ard*, which is that humans have a duty from Allah SWT to manage the universe (R. Rizk, 2014). This concept is that humans must utilize and maintain the planet for the common good. Based on this reason, Islamic banks should have higher social awareness than conventional banks (Aracil, 2019; Basah & Yusuf, 2013).

However, empirical evidence proves that Islamic banks have low social awareness and low social disclosure. From these findings, there are differences in the results of disclosure. However, all previous studies show that Islamic banks have social disclosures of 13.25% (Maali et al., 2006); 37.5% (Farook et al., 2011); 37.57% (Hassan & Harahap, 2010); 38% (El-Halaby & Hussainey, 2015); 32% (Aribi et al., 2019); 44.39% (Farag et al., 2014); 9.9% (Kamla & Rammal, 2013); and 27% (El-Halaby & Hussainey, 2016). In line with Farook et al. (2011), disclosures reported by banks describe the performance of Islamic banks. Disclosure in the annual report is an official bank report which is management accountability for the performance it has achieved to its stakeholders.

Besides being required to have social care, Islamic banks are also required to have good financial performance as business institutions. In evaluating this financial performance, previous studies have more emphasis on performance as financial ratios as conducted by Chowdhury and Rasid (2015), Mukhibad, Muthmainah et al. (2020), Basuony et al. (2014), Hamsyi (2019), Hakimi et al. (2018), Mollah et al. (2017), and Ghaffar (2014), and Cheema and Din (2013), and Beck et al. (2013), and

Sufian (2010). Accountability for financial performance as disclosure of financial performance has only been studied by Sherif et al. (2018), who have developed financial disclosures. The results of Sherif et al.'s (2018) study found that Islamic banks have financial performance disclosures of 86%, and financial performance has more important financial disclosures than social disclosures.

The third disclosure is shariah compliance. This disclosure is needed because Islamic banks are working under Islamic law. However, previous studies that discuss shariah compliance are more on the use of financial ratios such as non-halal income ratio (see Basiruddin & Ahmed, 2019) and profit-sharing ratio (see Hameed et al., 2004; Kuppusamy et al., 2010; Nurkhin et al., 2018). However, only Sherif et al. (2018) have developed shariah compliance disclosures and found that Islamic banks have 90% shariah disclosure.

Previous studies that examined social, financial, and shariah disclosures were only carried out by Sherif et al. (2018). However, Sherif et al. (2018) did not use SSB and BOD factors which are essential organs for monitoring bank performance and can reduce agency problems (AlShattarat & Atmeh, 2016). Sherif et al. (2018) used audit commitment and financial factors (size, liquidity, profitability) to explain the bank's financial, social, and shariah disclosures. Therefore, we completed the study of Sherif et al. (2018) by adding SSB and BOD variables.

SSB has a function to ensure that shariah institutions comply with shariah law, including compliance with information disclosure and bank social responsibility. Rahman and Bukair and Abdul-Rahman (2013) found that the combination of SSB as measured by the number, educational background, reputation, expertise, and cross membership positively influences CSR disclosure. That study is reinforced by Fitriyah et al. (2007), Almutairi and Quttainah (2017), Farag et al. (2014), and Mukhibad (2018), that found SSB size has a significant influence on CSR disclosure. The SSB has a vital role in overseeing the company's performance (Almutairi & Quttainah, 2017), including CSR performance (Farook et al., 2011). The study extends the previous studies by explaining the role of SSB in the disclosure of financial, social, and shariah disclosure.

Another organizational structure that has a role in improving disclosure performance is BOD. Harjoto and Jo (2011), Jizi et al. (2013), and Chen and Jaggi (2000), and (Garas & ElMassah, 2018) found that there was a positive relationship between independent BOD and the number of BOD members on disclosure. Independent board members can significantly influence disclosure levels by establishing and maintaining balance in the board's composition by increasing the board's level of effectiveness (Harjoto & Jo, 2011). The study extends the previous study by explaining the role of BOD on financial, shariah, and social disclosures.

The study has contributed to two things. The first is to expand disclosure which is not limited to disclosure of Corporate Social Responsibility (CSR). The study expanded the study of Islamic bank accountability by using financial, social, and shariah disclosure. Second, the study is essential to examine the role of BOD and SSB in increasing Islamic bank disclosure. In the structure of CG Islamic banks, BOD and SSB as the supervisors and act to reduce agency problems. Previous researchers have discussed the role of BOD and SSB in increasing CSR disclosure and have not discussed the role of BOD and SSB in increasing the shariah compliance disclosure. The shariah compliance bank operation is the primary responsibility of the SSB. More comprehensive disclosure can reduce information asymmetry.

This manuscript is presented in an essential part of interrelated. The first part describes the research background, including the development of the latest research on the accountability of Islamic banks and the limitations of previous research. Literature, conceptual framework, and hypothesis are presented in the second part. The third part explains the research method, including samples, variable measurements, and data analysis methods. The fourth part explains the results of the research and discussion. The final part explains the conclusion and recommendations for regulators and research limitations.

2. Theoretical framework and hypothesis development

To build a research model, we use stakeholder theory.

2.1. Stakeholders theory

Stakeholder theory is a theory of organizational management and business ethics that considers all stakeholders of an organization (Janamrung & Issarawornrawanich, 2015). Parties interested in the entity include employees, trade unions, contractors, suppliers, customers, creditors, affected communities, and governments (Ching & Gerab, 2017).

According to this theory, management as the manager of the company must be able to manage the company and ensure the fulfillment of the interests of all stakeholders. The owner has an interest in the profits earned. The debtor has an interest in the financing's sustainability provided by the company. Creditors have an interest in obtaining financing returns and returns on loans. Employees have an interest in receiving appropriate and fair salaries. The government is interested in the company's tax revenue, and the surrounding environment has an interest in sustainability and certainty that the company does not have a negative impact due to the company's operations. Based on Stewardship theory, the company must be able to serve all the interests of stakeholders. This means that stakeholder theory aims to create value for all stakeholders (Freeman et al., 2010).

Related to CSR performance, stakeholder theory predicts the level of social disclosure (Parmar et al., 2010). Even Parmar et al. (2010) revealed that stakeholder theory could predict the level of CSR disclosure. Factors that influence social disclosure are the needs of stakeholders (Campbell et al., 2006), investor needs and management emphasis, and market complexity (Boesso & Kumar, 2007).

2.2. Conceptual framework and hypothesis development

Based on the previous explanation, it can be concluded that there are differences between shariah entities and conventional entities in CSR activities. The involvement of conventional entities in CSR activities is more due to the entity's compliance with the law. Meanwhile, for shariah entities, CSR activities are a religious obligation. In line with the concept of *khilafah* and worship, humans were created, tasked to worship God, and manage the planet to meet the needs of all creatures in line with the command to earn a living for themselves and their families. The concept of *khilafah* means that humans have the mandate to prosper themselves and others (Aribi et al., 2011; Bukair & Abdul-Rahman, 2013). Thus, for shariah entities, CSR and commercial activities are obligations and worship, both for individual employees and collectively for the company.

Based on institutional theory, the company is a collection of systems with the same interest. This system, including the company management system, will impact the corporate management model and subsequently influence the company's output (performance, including social performance). The entity management model will influence the company's level of concern for social and commercial performances.

In addition, referring to the stakeholder theory, the company has a responsibility to disclose its performance to all stakeholders, and this disclosure is information on the company's management. Furthermore, relying on stakeholder theory, social activities can also reduce risk (Nguyen & Nguyen, 2015). Based on pecking order theory, companies with high leverage have a high risk.

2.3. Hypothesis development

The main factor that can improve bank performance is corporate governance (CG). Implementing CG will improve the financial (Hafez, 2015; Mollah & Zaman, 2015) and social performances of the bank (Farook et al., 2011; Jamali et al., 2008; Jizi et al., 2014). The positive relationship between board size and company performance is assumed that the BOD has the function of supervising and consulting services for directors (Ben Abdallah & Bahloul, 2021). Under agency theory, BOD is

needed to provide behavioral control so that managers meet the interests of all stakeholders (Kalsie & Shrivastav, 2016). Therefore, Islamic banks with many BOD members impact improvements in supervision and consultation.

Agency theory argues that BOD is a representative of shareholders and stakeholders to monitor performance and control the activities of managers (Kalsie & Shrivastav, 2016). Numerous BOD causes more effective supervision than a few directors. The number of directors will have a positive impact on company performance (Hakimi et al., 2018; Kalsie & Shrivastav, 2016), improve efficiency (Tanna et al., 2011), reduce risk-taking (Huang & Wang, 2015), and increase disclosure (Esa et al., 2012; Sadou et al., 2017).

Having many BOD members is associated with diversity in abilities, expertise, and backgrounds (Abeysekera, 2010), whereas a bank with many BOD members can elect members with different backgrounds. In carrying out their duties adequately, BOD requires various skills (Volonté & Gantenbein, 2016). Based on the agency theory that BOD has a function as a representative of stakeholders and supervisory managers of bank policies, the following hypothesis can be developed:

H1: The number of BOD members positively influences disclosure (financial, social, and shariah).

Another indicator of measuring CG is the independent BOD. The company owner elects the BOD at the General Meeting of Shareholders (GMS). All owners have voting rights to elect candidates for BOD. This scheme allows the majority owner to dominate the election of BOD. The impact is that the BOD comes from the majority owner. This condition causes the BOD's function as a solution to information asymmetry not to work well because information asymmetry can occur between majority and minority owners. This condition relies on independent BOD who can solve these problems.

Stakeholder theory assumes that the company's goal is to fulfill all stakeholders' interests (including majority and minority owners). Independent BOD is needed to control management performance to accommodate minority owners and other stakeholders, such as the public, through social and environmental concerns. Harjoto and Jo (2011) have empirically proven that the independent BOD influences CSR. Furthermore, Jizi et al. (2013), Chen and Jaggi (2000), Cullinan et al. (2016), and Sadou et al. (2017) found there was a positive relationship between independent BOD and the number of BOD on CSR disclosure. Independent BOD has a role in supervising the performance of management (Ahmed et al., 2006; Cheng & Courtenay, 2006; John & Senbet, 1998). Therefore, a large ratio of independent BOD impacts the effectiveness of supervision.

H2: Independent BOD has a positive influence on disclosure (financial, social, and shariah).

Agency theory argues that the BOD represents stakeholders carrying out supervision and consulting on manager policies. To carry out this function, BOD requires adequate expertise, experience, and skills related to the company's operations. One of the essential media for forming skills is education. Grace et al. (1995) argue that education is a unique measure for determining the level of professionalism. In addition, D'Amato and Gallo (2019) found that an education degree is considered a proxy for knowledge basis or intelligence and readiness to process complex information, respond to change, and innovate. Trinh et al. (2020), Mollah et al. (2021), and Malik et al. (2021) found that boards with superior financial expertise improve bank performance and bank financial stability. With this background, we can predict that an education with a financial/accounting background will provide the board with expertise in supervising managers' reports.

H3: BOD education in finance/accounting has a positive influence on disclosure (financial, social, and shariah).

Differences in principles, operations, and objectives between shariah and conventional banks require a different CG structure, i.e., SSB. SSB is a unique organ in Islamic banking. The complexity of operations causes Islamic banks to require additional supervision, such as from SSB (Alam et al., 2020; Farag et al., 2018; Najwa et al., 2019). Hussain and Al-Ajmi (2012) argue that Islamic banks with different product characteristics from conventional banks need additional supervisors from the SSB. Thus, SSB has duties in oversight and being a consultant for other boards (Bukair & Abdul-Rahman, 2013). Supervision of the SSB is needed to ensure that Islamic banks are in line with the shariah.

Shariah compliance is also related to information disclosure on the bank performance (Mukhibad et al., 2020). Islamic banks are built based on monotheism, where all humans are required to have accountability (Maali et al., 2006). Likewise, the community (as *umma*) within the company's environment requires information related to managing its assets which are entrusted to the bank director (Maali et al., 2006). Shariah strongly supports information disclosure because of the mandate received by the director as the manager of ummah funds (stakeholders).

Previous researchers have explained a lot about the role of SSB in increasing disclosure. However, previous studies were limited to social disclosure (Bukair & Abdul-Rahman, 2013; Farag et al., 2014; Fitriyah et al., 2007; Mukhibad, 2018) and risk disclosure (Elamer et al., 2020; Mukhibad, Nurkhin et al., 2020). Rahman and Bukair and Abdul-Rahman (2013) found that the combination of SSB as measured by the number, educational background, reputation, expertise, and SSB cross membership positively influences CSR disclosure. This study is reinforced by Fitriyah et al. (2007), Almutairi and Quttainah (2017), and Farag et al. (2014), who also found that the number of SSB influences CSR disclosure. This is because SSB has a vital role in overseeing the company's performance (Almutairi & Quttainah, 2017), including CSR performance (Farook et al., 2011). The larger SSBs contain scholars with a wide range of experience and skills and from different schools of *fiqh*, which leads to better interpretation of products and operations, and consequently improves performance (Hamza, 2016).

H4: The number of SSB has a positive influence on disclosure (financial, social, and shariah).

Another indicator of measuring the effectiveness of SSB in carrying out its duties is SSB's expertise in finance/accounting. SSB has the duty of a supervisor and counselor for managers in managing the bank. This supervision is to ensure that the bank complies with shariah. To carry out this function, SSB requires expertise in shariah. However, due to the complexity of bank operations, AAOIFI recommends SSBs have expertise in business, economics, law, or accounting. These skills complement their expertise in *Fiqh almua'malat*. (Khalid et al., 2018). Ghayad (2008) and Almutairi and Quttainah (2017) have proven that experience in finance/banking will carry out their duties more effectively.

H5: The educational background of the SSB has a positive influence on disclosure (financial, social, and shariah).

In the resources dependent theory approach, the board functions as a provider of resources, and board capital influences the board's oversight of the director's performance. The board brings information and expertise to the company, establishes a communication network with external parties, secures commitments for external support, and works to create legitimacy for the company in the external environment (Zhou et al., 2018). One of the unique boards of Islamic banks is the SSB. Thus, SSB can be a unique resource that can create knowledge, expertise, and legitimacy for banks to innovate products according to shariah and support business continuity.

As an independent board, SSB has directed, reviewed, and supervised bank operations to comply with principles and Islamic law (AAOIFI, 1997; Injas et al., 2016). SSB is often involved in product innovation (Alman, 2012) and coordinates with other boards. Therefore, in this social contact, SSB can exchange ideas with other boards, observe the operations/policies of managers,

and can adopt policies obtained from other banks. Cross-member SSB is an SSB that has positions in various shariah entities. Therefore, the cross-membership of SSB will positively impact the resources provided to the bank. Based on this reason, the cross-membership of SSB will increase the quality of supervision and encourage managers to improve the quality of their reporting.

H6: Cross-membership of the SSB has a positive effect on disclosure (financial, social, and shariah).

3. Research method

The population of this study is 14 Islamic commercial banks in Indonesia. The research sample was determined by the purposive sampling method with the provisions of the bank issuing financial statements and completing annual reports during the year of observation. The multi-year research was observed for 11 years, from 2010 to 2020, which a total sample of 141 unbalanced panel data.

All variables used in this study were determined by the following method:

- a. Disclosure (DISC) is measured by three sub-disclosure, namely financial (14 Indicators), social (10 Indicators), and shariah disclosure (27). We use 51 indicators to measure the entire scoring of disclosures adopted by Sherif et al. (2018), El-Halaby and Hussainey (2016), and El-Halaby and Hussainey (2016). The disclosure score is calculated by giving a value of 1 if the bank discloses a numeric or statement at least one paragraph and 0 otherwise. The disclosure score is calculated from the total score divided by the maximum score.
- b. BOD size (BODSIZE) is measured by the number of BOD members (Esa et al., 2012; Sadou et al., 2017).
- c. Independent BOD (BODIND) is measured by the percentage of the number of independent BOD among all BOD members (Chen & Jaggi, 2000; Cullinan et al., 2016; Jizi et al., 2014; Sadou et al., 2017).
- d. BOD education (BODEDU) is measured by the percentage of BOD members who have education in finance/accounting for the number of BOD members (Naheed et al., 2021; Malik et al., 2021; Mollah et al., 2021; Trinh et al., 2020).
- e. SSB Size (SSBSIZE) is measured by the number of SSB members (Almutairi & Quttainah, 2017; Farook et al., 2011; Muhammad et al., 2021).
- f. SSB education (SSBEDU) is measured by the ratio of SSBs with education in finance /accounting compared to the number of SSBs (Almutairi & Quttainah, 2017; Ghayad, 2008).
- g. SSB cross-membership (SSBCROSS) is measured by the number of SSB positions in other entities (Abdullah, Percy & Stewart, 2013; Nomran et al., 2018).

In addition to the variables above, we also use the following five control variables:

- a. Audit committee size (AUDITSIZE) is the number of audit committee members (Beasley et al., 2010).
- b. Return on Assets (ROA) is the ratio of net income to assets (Naheed et al., 2021).
- c. Investment Account Holders funds (IAH) are investment funds from customers who use *mudharaba* or *musyaraka* (Guermazi, 2020). The natural logarithm of IAH funds measures LNIAH.
- d. Income diversity (INCOMEDIVER) is measured by the ratio of non-operating income compared to the bank's operating income (Safiullah & Shamsuddin, 2018);
- e. Total assets (LNASSET) are measured by the natural logarithm of total assets.
- f. COVID is measured by a dummy where the year of observation of the measured period of COVID is given a score of 1, and 0 otherwise (Elnahass et al., 2021). This variable is used because the observation period includes the COVID-19 pandemic and before.

Ordinary Least Square (OLS) does not consider specific characteristics of banks such as managerial talent, and CG structure company culture that can affect decisions related to disclosure (Naheed et al., 2021). The data used in this study is panel data, so the appropriate analytical tool used is panel data regression.

The regression equation model is as follows:

$$DISCLOSURE_{i,t} = \beta_0 + \beta_1 BODSIZE_{i,t} + \beta_2 BODIND_{i,t} + \beta_3 BODEDU_{i,t} + \beta_4 SSBSIZE_{i,t} + \beta_5 SSBEDU_{i,t} + \beta_6 SSBCROSS_{i,t} + \beta_7 CONTROL_{i,t} + \varepsilon$$

4. Results

4.1. Descriptive analysis

Table 1 describes the description of each variable. Islamic banks have a number of BOD members between 4 and 5 people, with 65% being independent BOD. The number of SSB members is less than the BOD, with 2–3 people. 58.4% of BOD has a finance/accounting field education background, while SSB, only 37.53% have a finance/accounting field education background. SSB has quite a good experience because the average SSB, which is 2.28, also serves as a member of SSB in other entities. Islamic banks have a higher proportion of independent audit committee members than BOD is 80.3%.

Financial variables comprising IAH, INCOMEDIVER, and ASSETS show IAH has an average of 29.333 and Islamic bank has low INCOMEDIVER, which shows an average of 4.142%. This means that Islamic banks only earn a non-operating income of 4.142% of their operating income. Table 1 shows that the dominant bank revenue comes from financing.

The disclosure variable shows that the sample has an extensive average disclosure of 82.1%. The three types of disclosure (financial, social, and shariah) resulted in an average financial disclosure having a higher score of 82.1%. This financial disclosure is bigger than shariah disclosure (84.1%). However, this shariah disclosure score is higher than social disclosure (74.3%). Table 1 shows that the sample has the lowest social disclosure score than other sub-indicator disclosures.

Table 2 shows that the highest correlation score is 0.6526 (the correlation between BODSIZE and SSBSIZE). However, all correlations in Table 2 show results of <0.8. This means there is no multicollinearity, and all independent variables can explain the dependent variable. In addition, we use the Variance Inflation Factors (VIF) score to test multicollinearity. VIF score is 1.63 (less than 10), so there is no multicollinearity problem.

4.2. Main data panel test

Table 3 is the test results of the Fixed Effect (FE) estimation data panel and Random Effect (RE). The study does not apply OLS since this model ignores the company's factors (Gujarati & Porter, 2009) affecting bank policies on disclosures (Naheed et al., 2021). Table 3 presents the results of the Hausman test producing a p-value of 0.5277 (smaller than 0.05), so it recommends RE to answer the hypothesis. Moreover, to overcome the problem of endogeneity and serial correlation, we use the GMM technique. The first different level, Sargan Statistic Test, produces a p-value of 0.7168 and the Arellano and Bond Test (AR) 0.4564. This Test Show That Instruments and Valid Model Specifications.

Table 3 showed that the relationship between BODEDU and DISC had a coefficient of 0.074 and a standard error of 0.03443. The relationship between them is significant at the 5% level. In addition, The RE test result shows a significant influence at a level of 5% against DISC with a coefficient of -0.052. Table 3 also shows a significant relationship to the DISC at a 5% level with a coefficient of 0.054. These test results show that BODEDU and SSBEDU positively influence the DISC, and otherwise, SSBSIZE has a negative influence on DISC.

Table 1. Descriptive Variables

	DISC	BODSIZE	BODIND	BODEDU	SSBSIZE	SSBEDU	SSBCROSS	AUDITSIZE	ROA	LNIAH	INCOME-DIVER	LNASSET	COVID
Mean	0.821	4.414	0.654	0.584	2.324	0.375	2.284	3.371	1.666	29.333	4.142	29.688	0.090
Variance	0.008	0.352	0.027	0.537	0.259	0.139	1.548	0.507	10.635	2.439	1253.23	2.199	0.766
Maximum	0.921	6.000	1.000	1	3.000	1	5.500	5	13.6	32.059	406.974	32.474	1.000
Minimum	0.363	4.000	0.250	0.2	0.000	0	0.000	3	-20.13	22.171	0.000	24.239	0.000
Std. Dev.	0.088	0.596	0.165	0.232	0.512	0.373	1.214	0.712	3.261	1.562	35.764	1.483	0.287
Skewness	-1.592	1.125	0.064	-0.160	-0.034	0.402	-0.178	-1.808	-1.138	-0.896	10.370	-0.630	2.873
Kurtosis	7.248	3.243	2.984	2.268	4.112	1.804	2.776	10.986	18.832	5.485	114.167	3.915	9.252

Table 2. Correlation Analysis

	DISC	BODSIZE	BODIND	BODEDU	SSBSIZE	SSBEDU	SSB-CROSS	AUDIT-SIZE	ROA	LNIAH	INCOM-DIVER	LNASET	COVID
DISC	1.000												
BODSIZE	0.177	1.000											
BODIND	0.080	-0.172	1.000										
BODEDU	0.210	0.354	-0.042	1.000									
SSBSIZE	0.081	0.653	-0.040	0.184	1.000								
SSBEDU	0.081	0.196	0.113	-0.054	0.244	1.000							
SSB-CROSS	0.237	-0.030	-0.069	0.064	-0.127	-0.300	1.000						
AUDIT-SIZE	0.045	0.205	-0.093	0.116	0.179	0.155	-0.114	1.000					
ROA	-0.138	-0.019	-0.201	-0.210	-0.073	0.196	-0.095	0.018	1.000				
LNIAH	0.420	0.498	-0.043	0.205	0.481	0.235	0.335	0.196	-0.095	1.000			
INCOM-DIVER	-0.008	-0.075	0.019	-0.125	0.141	-0.040	-0.020	-0.057	-0.009	-0.036	1.000		
LNASET	0.210	0.389	0.029	0.125	0.372	0.271	0.128	0.143	0.031	0.579	0.043	1.000	
COVID	0.117	-0.144	-0.023	-0.128	0.025	0.088	-0.006	-0.169	0.006	0.104	0.328	0.021	1.000

Table 3. Impact of Independent Variables on Disclosure

Variables	RE		SYS-GMM	
	COEF	STD. ERR	COEF	STD. ERR
BODSIZE	0.0062	0.0163	0.0186	0.0136
BODIND	-0.0166	0.0401	-0.0077	0.0359
BODEDU	0.0748**	0.0344	0.0284*	0.0360
SSBSIZE	-0.0522**	0.0215	-0.0379*	0.0199
SSBEDU	0.0548**	0.0212	0.0107*	0.0226
SSBCROSS	0.0001	0.0067	-0.0061	0.0072
AUDITSIZE	-0.0009	0.0097	-0.0011	0.0067
ROA	-0.0017	0.0021	-0.0009	0.0014
LNIAH	0.0385**	0.0057	0.0490***	0.0123
INCOMDIVER	0.0002	0.0002	0.0001	0.0001
LNASET	-0.0047***	0.005482	-0.0068***	0.0046
COVID	0.0087	0.021669	-0.0053	0.0141
Lag1.DISC	-	-	0.3030**	0.0975
CONS	0.9752***	0.1741	0.7554***	0.1586
Hausman P-value	-	0.5277	-	-
AR (2) P-value	-	-	-	0.4564
Sargan Stat p-value	-	-	-	0.7168
R ²	-	0.3288	-	-
N	-	141	-	114

*** sig at 1%; ** sig at 5%; * sig at 10%.

This model is the result of the Hausman test where sig <0.05, the decision uses the Fixed Effect (FE) and vice versa using the Random Effect (RE)

Table 4 presents the test results of independent variables on sub-disclosure (financial, social, and shariah). The test results in Table 4 use FE or RE, where the selection of FE or RE is based on the Hausman test. Suppose the Hausman test produces a p-value <0.05, recommending FE to answer the hypothesis and vice versa. In addition, Table 4 also presents the recommendations GMM test results (Ullah et al., 2018) to overcome the problem of endogeneity.

The test results using social disclosure as the independent variable show that SSBEDU as the primary variable has a significance <0.01 with a coefficient of 0.089. These results show that SSB with finance/accounting education positively influences social disclosure. In this model test, we did not find the role of BOD in increasing social disclosure.

Table 4 shows that all BOD and SSB attributes do not affect financial disclosure. However, by using shariah disclosure, the results of the FE test show that BODEDU and SSBEDU have a positive influence on shariah disclosure. BODEDU is proven to have a coefficient of 0.063 with a significance of 5%. In comparison, the SSBEDU has a coefficient of 0.061 with a significance of 1%. This result is reinforced by the GMM test, which supports this finding. Table 4 also shows consistent results that IAH funds (LNIAH) have a significant positive effect on all sub-disclosures.

4.3. Discussion

This study showed the inexistence effect of the number of BOD and SSB members on increasing disclosure. The findings of this study are different from the research of (Esa et al., 2012) and (Sadou et al., 2017). There are two distinct effects of large board numbers in the previous literature. Banks with large boards are often associated with improved bank performance (Esa

Table 4. Impact of Independent Variables on Sub-Disclosure (Social, Financial, and shariah Disclosures)

Variables	Social Disclosure				Financial Disclosure				Shariah Disclosure			
	FE		SYS-GMM		RE		SYS-GMM		FE		SYS-GMM	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
BODSIZE	0.0101	0.0187	0.0109	0.0170	-0.0045	0.0326	0.0073	0.0272	0.0140	0.0151	0.0298	0.0145
BODIND	-0.0480	0.0436	-0.0086	0.0462	0.0706	0.0797	-0.0178	0.0644	-0.0404	0.0352	0.0175	0.0345
BODEDU	0.0127	0.0414	0.0523	0.0454	0.0845	0.0604	-0.0241	0.0363	0.0638**	0.0334	0.0479**	0.0257
SSBSIZE	-0.0204	0.0258	0.0003	0.0263	-0.0610	0.0414	-0.1006	0.0656	-0.018	0.0205	-0.0198	0.0165
SSBEDU	0.0892***	0.0266	0.0215**	0.0311	0.0036	0.0392	0.0175	0.0287	0.0619***	0.0214	-0.0023*	0.0163
SSBCROSS	0.0033	0.0089	0.0126	0.0090	0.0032	0.0123	-0.0169	0.0176	-0.0039	0.0071	-0.0052	0.0045
AUDITSIZE	0.0024	0.0109	0.0029	0.0086	0.0264	0.0184	-0.0104	0.0066	0.0082	0.0088	0.0021	0.0031
ROA	-0.0021	0.0023	0.0003	0.0019	-0.0013	0.0043	-0.0016	0.0012	-0.0009	0.0018	-0.0012	0.0010
LNIAH	0.0224***	0.0084	0.0245***	0.0140	0.0353***	0.0129	0.1099***	0.0221	0.0371***	0.0061	0.0361***	0.0088
INCOMDIVER	0.0001	0.0002	-0.0013	0.0002	0.0009	0.0004	0.0004	0.0003	0.0001	0.0001	0.0008	0.0005
LNASET	0.0007	0.0061	0.0015	0.0059	-0.0179*	0.0107	-0.0208**	0.0236	0.0056	0.0050	-0.0044	0.007084
COVID	0.0145	0.0232	0.0077	0.0176	0.0433	0.0469	-0.0400	0.0298	0.0266	0.0187	0.0108	0.0128
Lag1.DJISC	-	-	0.3636***	0.1495	-	-	0.1346	0.2145	-	-	0.1012***	0.1070
_cons	0.7098***	0.1971	0.3026**	0.2269	1.3476***	0.3316	1.5943***	0.5968	0.5857***	0.1590	0.7434**	0.2276
Hausman P-value	0.0453	-	-	-	0.2521	-	-	-	0	-	-	-
AR (2) P-value	-	-	0.5722	-	-	-	0.951	-	-	-	0.5722	-
Sargan Stat p-value	-	-	0.7175	-	-	-	0.7168	-	-	-	0.7175	-
R ²	0.0277	-	-	-	0.2039	-	-	-	0.1435	-	-	-
N	141	-	114	-	141	-	114	-	141	-	114	-

*** sig at 1%, ** sig at 5%, * sig at 10%.

This model results from the Hausman test where sig <0.05, the decision uses the Fixed Effect (FE) and vice versa using the Random Effect (RE)

et al., 2012; Sadou et al., 2017). A large number of board members allow banks to diversify their expertise, skills, experience, and other backgrounds and strengthen their independence because it is difficult for managers to intervene (Quttainah et al., 2013). On the other hand, a large BOD is often associated with a decrease in the quality of supervision because a large BOD often experiences communication and coordination problems among the board (Nomran et al., 2018). The results of this study strengthen the opinion that having a large board creates communication and coordination problems between members, which will further reduce their effectiveness in carrying out and not encourage problems to improve their performance.

The results also show that independent BOD does not influence disclosure. The findings of this study are different from the research of Jizi et al. (2013), Chen and Jaggi (2000), and Sadou et al. (2017), who has provided evidence that independent BOD has a positive influence on disclosure. Independent BOD has the primary duty to safeguard minority interests over other stakeholders (Chou et al., 2013). However, these results show that the interests of stakeholders have been accommodated by all BOD since most of the BOD in Islamic banks are independent. Furthermore, the bank's funding structure is more than equity, and the parent bank dominates the ownership structure of Islamic banks. This ownership structure causes the role of BOD to protect the interests of the owners and all stakeholders.

This study showed that the BOD with an educational background in finance /accounting was associated with greater disclosure. This research proves that banks with large BOD members with financial/accounting education will increase social disclosure. These results support the research from (Naheed et al., 2021) and the resource dependence theory that BOD with financial expertise has better knowledge and will allocate company resources (Naheed et al., 2021). In the agency theory approach, BOD with financial expertise will increase the role of top supervisors on bank managers to positively impact financial performance (Mollah et al., 2021; Trinh et al., 2020). Under the task carried out by BOD, Educational background will improve decision-making by utilizing all complex information and promote better relationships with stakeholders through increased disclosure.

Table 3 shows that the number of SSB members has no effect on disclosure. This result differs from the results of research by Almutairi and Quttainah (2017); Farag et al. (2014), who found that a large number of SSB members encouraged Islamic banks to increase CSR disclosure. Many SSB members cause the bank to diversify the demographics of SSB members. Demographics of board members may include skills, experience, educational background, age, and gender (Goyal et al., 2019; Johnson et al., 2013). This demographic diversity causes the shortage of SSB members to be covered by the skills of other members. Diversity of SSB can increase the effectiveness of SSB in carrying out its duties as supervisor and consultant for directors. However, the large number of SSBs has coordination costs and free-rider problems (Mukhibad, Rochmatullah et al., 2020; Nawaz, 2017).

The results of this study lead to a lack of effective communication and coordination among SSB members, so the number of SSB members has a negative influence on disclosure. Banks with large SSB members can use policies to diversify SSB demographics. However, this diversity can also reduce the effectiveness of coordination and communication among SSB members and other boards. For example, one member speaks Indonesian, but another member can only speak English. Although their coordination can be assisted by a translator, it allows for different interpretations, less accurate the corresponding judgments to be incorrect (Ginena, 2014). So having many SSBs will reduce SSB performance (Nawaz, 2017). The results of the study confirm that a few boards reduces agency costs, improve coordination between board members (Nomran & Haron, 2020; Quttainah et al., 2013), reduces coordination costs, reduce free-riders (Hermalin & Weisbach, 2003), as well as improve supervisory capabilities (Khanchel, 2007).

Moreover, Table 3 also shows that SSB with an educational background in finance/accounting has a positive influence on disclosure. These results support the research from Mnif and Tahari (2021) and Bukair and Abdul-Rahman (2013), who has found a relationship between the financial expertise of SSB and disclosure. SSB's expertise in finance/accounting can improve the quality of bank supervision to improve communication with stakeholders through increased disclosure, including CSR disclosure and shariah disclosure). This study strengthens the agency theory that SSB with financial/accounting expertise can reduce agency problems, increasing disclosure and reducing information asymmetry. Functions similar to BOD, SSB as supervisors and consultants for directors in managing banks (Alman, 2012; Injas et al., 2016). So that SSBs who have an educational background in finance/accounting have better skills in carrying out their duties (Almutairi & Quttainah, 2017; Ghayad, 2008), including their ability to prevent fraud (Mukhibad et al., 2021). A board of financial experts can increase the effectiveness of bank asset management and recommend directors who improve relations with stakeholders (Naheed et al., 2021). Bank operational compliance with shariah is the main guarantee of bank directors given to stakeholders (Mukhibad & Setiawan, 2020). The increasing shariah disclosure can increase customer trust and improve good relations with stakeholders.

We found SSB cross-membership did not affect disclosure. In the resource dependence theory (RDT) approach, SSB members who become the number of SSB positions in other entities can be a unique resource for banks (Hillman & Dalziel, 2003) that can improve bank performance (Alabbad et al., 2019; Nomran et al., 2017), as they are perceived to have a wider range of connections (Homroy & Slechten, 2019), bring in better resources (Trinh et al., 2021) and capabilities and can further improve the oversight and quality of consultation provided to other boards. However, the relationship between the two is inconsistent. Because SSB Cross-membership can cause their low availability of time to carry out their duties (Alabbad et al., 2019), their low attendance at SSB meetings, both between SSB members and meetings with other boards, will further impact the decline in SSB performance. SSBs who are members of SSBs in other entities can gain broader skills and knowledge through their discussions and observations about the operations of other banks. However, the lack of time prevents them from being able to use their abilities effectively to increase oversight and encourage directors to increase disclosure.

4.4. Endogeneity problems

Endogeneity bias can lead to inconsistent results and erroneous conclusions that lead to misleading conclusions and incorrect theoretical interpretations (Naheed et al., 2021; Ullah et al., 2018). Furthermore, Ullah et al. (2018) suggest using GMM to solve the endogeneity problem. We have presented the results of the system GMM test in Tables 3 and 4, where the results of the Sargan and AR (2) tests show that the instrument and model specifications are valid.

5. Conclusions

The study examines the influence of corporate governance on bank accountability as measured by the extent of all disclosures—shariah, social, and financial disclosures. We use the board of directors (BOD) and the shariah supervisory board (SSB) as indicators of corporate governance. BOD attributes are measured by the number of members, independence, and educational background, while SSB is measured by the number of members, educational background, and cross-membership indicators. The results showed that the BOD education in finance/accounting positively affects disclosures. The number of SSB members is associated with increased disclosure. However, the SSB education in finance /accounting is associated with an increase in disclosure. This study strengthens the theory of resources dependence theory that BOD and SSB, who have expertise in finance/accounting, are essential resources for banks that can encourage directors to increase disclosure. The system GMM test confirmed the result of this study to overcome the problem of endogeneity.

The implication of this study is to encourage regulators to encourage the effectiveness of BOD and SSB by increasing the number of members at a certain level and encouraging banks to choose BOD and SSB members who have an educational background in finance/accounting. In addition, selecting experienced SSB members by becoming members of SSBs of other entities can reduce asymmetry information and agency problems by increasing the extent of the disclosure provided by the director to stakeholders.

This study focuses on three disclosures, i.e., shariah, social and financial disclosures in Islamic banks in Indonesia. The director's responsibility to stakeholders is not only limited to these three disclosures because the disclosure needs are under the needs of stakeholders. Therefore, further study can develop more comprehensive and not limited disclosures to these three disclosures.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

Author statement

The author is a lecturer and researcher in Islamic accounting and finance. One of our focuses is Islamic bank (IB) performance. This paper focuses on performance-based disclosure, which is the primary communication tool between stakeholders and bank management. The unique IB operating system leads to different disclosure models. Moreover, the paper encourages IBs to pay attention to those three pillars of disclosure, disclosure of financial performance, social performance, and shariah compliance. It is expected that the disclosure of bank performance information will increase the loyalty of depositors and other stakeholders and further improve bank performance.

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