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Developing Green Banking Performance Measurement for Islamic Bank with Maqasid Shariah

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Abstract

The application of green banking (GB) practices can be a solution to various environmental problems and help achieve the SDGs. However, the performance of GB implementation in Indonesia's Islamic Bank is still unclear due to the unavailability of instruments to measure its implementation. Even though information regarding GB implementation in Indonesia's Islamic bank is urgently needed to achieve the SDGs and sharia goals or maqasid sharia. This study aims to develop index for measuring GB performance in Islamic Bank using maqasid syariah and ESG as framework, namely green banking maqasid index or GBMI. Model development and weighting in this study use the Delphi-ANP (Analytic Network Process) method. The results of this study reveal the order of priority and weight of variables related to GBMI measurement. There are 6 main priorities out of 18 important variables in ESG and their weights, namely green human resource management (HRM) (0.075), health and safety of the workplace (0.072), green product and service (0.070), green strategic planning (0.069), and elimination of wastage (0.065). These results also indicate that green HRM is among the most emphasized variables in the application of GB concept. Thus, educating HRM to understand the GB concept well is quite important in the initial stage of implementing GB practices in Islamic banks.

INTRODUCTION

In 2007, the Inter-governmental Panel on Climate Change (IPCC) and the Stern Review warned of a worst-case scenario of increased greenhouse gas emissions. However, currently a much worse scenario has occurred, where greenhouse gas emissions are increasing three times faster than predicted (Bowman, 2010). The increase in greenhouse gas emissions has become the main cause of climate change and global warming, which is currently being monitored in the Sustainable Development Goals (SDGs) and the Paris Climate Agreement (Sachs et al., 2019).

Besides that, there are also various environmental damage problems that the world must face today, which, according to Kotler (2011), will raise significant questions regarding sustainability issues. How will natural resources be available to the next generation? Will they enjoy the same share as the current generation does? Therefore, companies are currently required to pay more attention to sustainability issues by implementing major changes in every aspect of their business.

Collaboration among various parties is urgently needed to mitigate the increasingly pressing climate change disaster (Bowman, 2010). One crucial stakeholder that must be involved in addressing this issue is the banking industry. As a major player in the financial

sector, banking can support economic growth (Bukhari et al., 2020) and drive change towards sustainable development (Jeucken & Bouma, 1999; Tara et al., 2015).

In the past, banking was considered a clean and environmentally neutral industry, but in reality this is not the case (Jeucken & Bouma, 1999). Besides its direct negative impact on the environment through carbon emissions from operational activities, banking also has indirect impacts through funding or financing activities for industries that may exploit nature or harm the environment (Chew et al., 2016; Hamidi et al., 2021).

Implementing Green Banking (GB) practices can offer a solution to this problem (Bukhari et al., 2020). GB, also known as environmental banking, ethical banking, or sustainable banking (Tara et al., 2015), entails eco-friendly banking practices (Mulla & Nobanee, 2020) that aim to reduce carbon footprint in operational activities (Jayabal & Soundarya, 2016). The application of GB is often associated with Environmental, Social, and Governance (ESG) aspects, thereby making core banking activities more sustainable and aligning with social and environmental priorities. This integration helps mitigate financial risks and negative impacts on the environment (Oyegunle & Weber, 2015).

The concept of Green Banking (GB), which emphasizes environmental protection, aligns with Islamic teachings and fulfills the basic criteria of Maqasid Sharia (Julia et al., 2016). Llewellyn (1984) explained that the Quran and Hadith contain various teachings regarding environmental protection. These include prohibitions on causing damage to the earth (QS 2:205, 7:56, 28:77), the recognition that all living creatures have the right to enjoy the resources created by Allah (QS 25:48-50, 41:10), and the prohibition on wasting resources (QS 17:27, 7:31) (Bukhari et al., 2019). Additionally, several Hadiths recommend planting trees, prohibit cutting down trees carelessly, torturing animals, and wasting water or destroying natural resources (Llewellyn, 1984).

Similarly, Maqasid Sharia aims to achieve prosperity for all mankind by safeguarding religion (diin), the soul (nafs), reason ('aql), offspring (nasl), and property (maal). Maqasid Sharia provides a broad framework that can accommodate a blueprint for sustainable development (Hasan, 2006), which can be achieved through the application of GB practices in banking (Mulla & Nobanee, 2020). For example, Sharia emphasizes the preservation of offspring (nasl), which ensures equality in the distribution of prosperity, natural resources, and environmental sustainability for the ummah or the next generation (Hasan, 2006). Therefore, applying GB principles to Sharia banking activities is important as it aligns with Islamic teachings and is part of Islamic law (Julia et al., 2016).

To oversee and facilitate the implementation of GB in Sharia banking, a measuring tool is essential. This tool should be utilized by regulators and Sharia banking institutions to assess and implement crucial principles related to GB. Importantly, this measuring instrument must align with Maqasid Sharia and the ESG framework, as discussed in the preceding paragraph."

Previous research has explored various aspects of Green Banking (GB) in the banking sector. Shaumya & Arulrajah (2016) and Kumar & Prakash (2019) developed frameworks for assessing GB performance in conventional banking. Additionally, Julia & Kassim (2020) and Hamidi & Worthington (2021) have conducted comparative studies on the performance of GB implementation and sustainable banking. Moreover, several studies have focused on using the Maqasid Sharia concept to formulate performance evaluation tools in Sharia banking globally. These include research by Mohammed et al. (2009), Bedoui & Mansour (2015), Asutay & Harningtyas (2015), Ascarya et al. (2017), Hudaefi & Noordin (2019), and Tarique et al. (2021)."

However, the majority of existing research primarily focuses on the application of GB practices in conventional banking. Furthermore, studies on formulating indexes using the

Maqasid Sharia framework to measure Sharia banking performance remain general and lack in-depth discussions on GB performance measurement. Similarly, research on formulating GB performance measurement tools in Sharia banking using the Maqasid Sharia framework often overlooks ESG aspects. Assessing the performance of GB implementation is crucial to understand the extent of Sharia banking's contribution to combating climate change and fostering sustainable development, which aligns with the fundamental concept of Maqasid Sharia.

Hence, this study was conducted to develop an index that serves as a measuring tool for assessing the performance of Green Banking (GB) in Sharia banking. The index, named the Green Banking Maqasid Index (GBMI), will be constructed based on the principles of Sharia Maqasid and the Environmental, Social, and Governance (ESG) framework."

It is hoped that GBMI will be useful for Sharia banking to maintain records based on formulated variables, thereby enabling more standardized and measurable reporting. Additionally, this research can be beneficial for the government, regulators, and shareholders in assessing, measuring, and analyzing the extent of the performance of GB implementation in Sharia Banking to achieve SDGs and maqasid sharia goals.

LITERATURE REVIEW

Green banking

The environmental care movement began in the 17th century, but gained significant momentum in the 19th century with a focus on climate change. By the late 1980s, the concept of a "green economy" emerged, emphasizing the efficient use of natural resources, social considerations, and ecosystem protection. The green economy is recognized as a way to achieve sustainable development, reduce poverty, and forms the foundation for green banking practices (Bukhari et al., 2019). Furthermore, this concept developed towards green growth, which is defined by the World Bank as economic growth that is efficient in terms of the use of natural resources, clean because it minimizes pollution and environmental impacts, and resilient because it involves the role of environmental management and considering damage factors due to natural disasters. As a symbol of environmental awareness, the term "green" has become increasingly developed and popular. So the term "green banking" has also emerged in the banking world, which is the introduction of the "green" concept into the banking sphere (Barua, 2020).

The GB concept was first implemented by Triodos Bank (TB) in the Netherlands in 1980 through a financing product for environmentally friendly projects called a green fund (Barua, 2020). Triodos means three way approach, namely people-planet-profit. This idea began in 1968 from a study group that was trying to find a financial management system in a more sustainable way. This was the beginning of the green banking concept which was later implemented by banks. There are various broad definitions and interpretations of GB. Each Central Bank and financial regulator even has its own definition and tries to apply it in different ways (Apostoaie et al., 2019).

GB is a banking concept that provides environmentally friendly innovative products in order to reduce carbon footprint in its internal and external activities (Bukhari S. et al., 2019; Jayabal & Soundarya, 2016; Tara, et al., 2015). This concept has the aim that banks become more responsible in the use of natural resources and are more in favor of environmental and social aspects (Jayabal & Soundarya, 2016). GB can also be referred to as part of Sustainable Banking (Kumar & Prakash, 2019), because the two terms have a concept that is in line, namely attention to environmental and social aspects. We can see this in Giuseppi (2001) which states

that sustainable banking can be interpreted as a bank decision in providing products and services only to customers who pay attention to social and environmental impacts.

Barua (2020) explains, the urgency of the implementation of the GB concept in banking due to several things including, to get a new market as a competitive advantage, as a form of active participation from risk management, part of CSR and form an image as an environmentally friendly company. In connection with risk management, banks actually face some risks when financing business activities that are not sustainable including legal, credit, reputation and systemic risks. Through the practice of applying GB, banks as financial intermediary can help the country in achieving several goals in SDGs including against Climate Change, affordable and clean energy, clean water, and good sanitation (Barua, 2020). For example in several studies it is stated that the implementation of the GB concept through the practice of green finance (Meo & Karim, 2021) and Green Investment (Shen et al., 2021) is considered to be a solution to the Climate Change problem, because in their studies they found that Green Finance and Green Investment is among the right strategies as a solution to reduce CO2 gas emissions.

To be able to implement this concept comprehensively, banks must make changes to their vision, mission, policies and strategies and equip them with GB features. Of course, these changes cannot be implemented all at once, but can be implemented in stages, through the formation of several process clusters that can be implemented consistently (Barua, 2020).

ESG (Environment, Social and Governance)

The term green banking is often associated with ESG (Environment, Social and Governance), Corporate Social Responsibility (CSR) and Sustainable Banking. The three terms have a connection in terms of activities that are not only limited to reporting and compliance requirements. The most extensive and earliest term emerged was CSR and this term was related to the term socially responsible investing (SRI). The revival of the application of SRI in the modern world was recorded around the 1950s when investors began to implement screening for business that is nonethical and does not invest in similar companies, in the context of carrying out the teachings of their religion. The SRI then developed into one form of investment strategy that included the environment, social and governance dimensions in decision making when investing (Barua, 2020).

Then In 2005, The United Nations (UN) together with an international organization that promotes ESG integration into the decision of investing, namely Principles for Responsible Investing (PRI) formulates six principles of responsible investing for companies, banking and researchers to collaborate and coordinate about issues continuity. The agreement aims to help investors realize and apply ESG aspects in every tool and decision to invest. Some of these principles are regarding agreements for the merging of ESG issues as part of investment analysis and decision making process, making reporting on the application of the ESG, and promoting its application to the investment industry (Hill, 2020).

The ESG dimension has also been applied as one of the company's performance measurement tools to the environment, has been widely used and considered as one of the most appropriate. Even some large companies in the field of financial information services such as Thompson Reuters ESG Research Data, Bloomberg ESG Data Services, Dow Jones Sustainability Index (DJSI), and MSCI ESG Research, have developed a rating of references or matrix ratings based on the three elements of ESG to measure the level of sustainability and Ethical standing of a business. Other information service institutions related to ESG score measurements are Sensefolio. Sensefolio collects data through three components namely financial news, ESG/sustainable reports, and social media posts. Sensefolio has developed its

own ESG framework. The results of the calculation of the score can be said to be very updated and real-time because it uses special logarithms to assess the three data components used (Barua, 2020).

Bukhari et al. (2019) states, various banking guidelines and policies including The International Finance Corporation (IFC) have used the three dimensions of ESG as a reference for the formulation of the GB concept. Several things that will be focused on the ESG dimensions are as follows (Bukhari et al., 2019): 1) environmental aspect, is about the bank approach on the environmental guard. Among them are consideration of natural resource consumption and financing restrictions on industrial projects that pollute nature; 2) social aspect, is about fulfilling banking responsibility for stakeholders both from the internal and external side, such as fulfillment of employee rights, the community widely, including value chain partners; 3) governance aspect, is about the formation of banking strategies and procedures in terms of implementing social and environmental aspects.

Maqasid Syariah and Maqasid Index

Maqasid Shariah consists of two words: maqāṣid, the plural form of Maqsad meaning purpose, and shari'ah, a complete life guide encompassing sanctions related to beliefs (al-Ahkam al-i'tiqadiyyah), behavior and worship (Ahkam al-'Amaliyyah), and morals and ethics (al-Ahkam al-Akhlaqiyyah), thus literally translating to the goals of Islamic law (Akram Laldin, 2020). Derived from the Quran and Sunnah, and further interpreted by scholars, Maqasid Shariah aims to bring prosperity (Jalb al-Masalih) and avoid harm (dar 'al-mafasid) (Ibn Ashur, 2006; Chapra, 2008). Emphasizing its significance, scholars like Al-Juwayni, Al-Ghazali, Ibn Taimiyyah, and Ibn Qayyim Al-Jauziyyah have extensively studied and expanded on this concept. Al-Ghazali systematized Maqasid into three hierarchies: essential (daruriyyat), complementary (hajiyyat), and embellishment (tahsiniyyat), with daruriyyat safeguarding five fundamentals: religion (diin), soul (nafs), reason ('aql), descendants (nasl), and wealth (maal) (Laldin, 2020). In "The Islamic Vision of Development in the Light of Maqāsid al-Sharī'ah," Chapra (2008) discusses these principles, noting that scholars like Al-Shatibi and Fakhr al-Dīn al-Rāzi may prioritize these elements differently based on context, suggesting that for sustainable development, the order should be soul (nafs), religion (diin), reason ('aql), offspring (nasl), and property (maal).

Currently, Islamic banking predominantly uses conventional performance metrics, leading to a perception of lagging behind conventional banking due to differing goals that are multidimensional versus the unidimensional financial focus of conventional benchmarks (Mohammed et al., 2008). Hasan (2004) emphasized that Islamic banking performance should not rely solely on financial ratios but also on social responsibility aligned with the Islamic framework. Performance measurement, which evaluates whether a company has met its goals, should incorporate both financial and broader sharia maqasid-based indicators (Mohammed et al., 2008). The primary vision of sharia maqasid aims at promoting prosperity (Jalb al-Masalih) and avoiding harm (dar 'al-mafasid), including aspects like prosperity promotion, anti-corruption, sustainable resource use, and Islamic lifestyle application (Ibn Ashur, 2006). This ensures that Islamic financial institutions contribute to human welfare, social stability, environmental protection, and economic growth (Bedoui & Mansour, 2015). Developing performance indexes for Islamic financial institutions is crucial for stakeholders to evaluate goal achievement and investment outcomes (Hamed et al., 2004). Mohammed et al. (2008) adopted the sharia maqasid concept into a performance evaluation tool, forming the Maqasid

Index, which translates the multidimensional goals of Islamic banking into measurable elements.

GB, ESG and Maqasid Sharia

Starting with the issue of sustainability and climate change, as explained at the beginning of this paper, sustainable development becomes an important concept to consider. According to the WCED (World Commission on Environment and Development), sustainable development is a concept of equality between generations. Development should meet the needs of the current generation without compromising the ability of future generations to meet their needs (Hasan, 2006). According to Mulla and Nobanee (2020), sustainable development can be achieved through the application of GB practices in banking. The aspects of environment, social, and governance (ESG) are the main framework in the implementation of GB practices. ESG has also been used as one of the measurement tools for companies to assess their performance in environmental matters (Barua, 2020).

The main objective, or maqasid of Sharia is to achieve prosperity (Jalb al-Masalih) and avoid harm (dar' al-mafasid) by safeguarding five fundamental things (al-daruriyyat al-khamsah): religion (diin), soul (nafs), reason ('aql), descendants (nasl), and property (maal) (Chapra, 2008). According to Hasan (2006), this Sharia maqasid provides a suitable framework for accommodating the blueprint of sustainable development.

If Sharia maqasid is applied, it will not only address issues related to sustainable development but also guide the world in a positive direction and improve the current situation. In the context of Islamic finance and sustainable development, Sharia maqasid can be directly related to aspects such as mental well-being (nafs) (Julia et al., 2016), assets (maal) (Laldin, 2020), and descendants (nasl) (Hasan, 2006). Thus, the application of GB practices in Islamic banking is closely related to the principles of Sharia maqasid and aligns with Islamic teachings.

Previous Studies

Previous studies on Green Banking (GB) have evaluated the application of its practices in various contexts. Bukhari et al. (2019) examined the relationship between Islamic teachings and GB practices in Sharia banking, using ESG dimensions and references to the Quran and hadith. Secondary data comes from various existing literature as well as regulations and guidelines related to the implementation of GB. In this framework, the implementation of GB practices is divided into three main criteria. The environmental criteria consist of several sub-criteria, namely green building, natural resource conservation, elimination of waste and green products & services. In the social criteria consist of employee rights, stakeholder awareness, and Islamic CSR. And the governance criteria consist of green HRM (human resource management), green financing, green reporting and green audit.

Julia & Kassim (2020) compared green performance between conventional and Islamic banks in Bangladesh, using Maqasid Sharia and Bangladesh Bank GB policies, and found no banks fully met green policy criteria. In conventional banking, Shaumya & Arulrajah (2016) developed 16-items instrument with four dimensions such as employees, daily operations, customers, and bank policies, to measure GB practices in Sri Lankan conventional banking. Kumar & Prakash (2019) created a framework with 40 indicators across five groups to assess sustainability in Indian banks, focusing on sustainable products, environmental management, and social development. Sharma & Choubey (2022) examined three components, namely green product development, green CSR, and green internal processes from two sides, namely green brand image and green trust, to examine the conceptual model of the GB practice initiative and the impact of those three components.

Previous research on the development of the Maqasid Index model includes significant contributions by Mohammed et al. (2008, 2015), Bedoui & Mansour (2012, 2015), Asutay & Harningtyas (2015), Ascarya et al. (2016, 2017), Hudaefi & Noordin (2019), and Tarique et al. (2021). Mohammed et al. pioneered a new approach to measuring Islamic banks' performance through Maqasid Sharia theory, while Bedoui & Mansour created a framework incorporating financial and non-financial performance elements, weighting the 42 elements detailed by Chapra (2008) from Al-Ghazali's Maqasid Sharia concept. Asutay & Harningtyas (2015) developed an index combining the Islamicity Disclosure Index, Ethical Identity Index, and CAMEL ratio, transforming Maqasid Sharia elements into performance ratios. Ascarya et al. (2016, 2017) advanced the Islamic bank Maqasid index using content analysis, ANP additive weighting, and the Delphi method. Hudaefi & Noordin (2019) introduced the Integrated Maqasid Al-Sharīʿah-based Performance Measure (IMSPM) using a qualitative approach, while Tarique et al. (2021) formulated performance measurement variables by combining Maqasid theories of Al-Ghazali and Abu Zahra through literature review, expert interviews, and FGDs.

Despite extensive research on general Sharia banking performance, specific evaluations of Green Banking (GB) practices remain limited. Most GB evaluation research has focused on conventional banking using conventional metrics, with a lack of developed indexes for Islamic banking. This research aims to fill this gap by developing an index to evaluate GB implementation in Islamic banking in Indonesia, integrating Maqasid Sharia with ESG aspects using the Delphi-ANP method. This approach is expected to yield a comprehensive indicator for assessing the contribution of Islamic banking to sustainable development goals.

RESEARCH METHOD

Data

The data used in this research consists of primary data obtained through paired questionnaires distributed to respondents who possess a comprehensive understanding of the issues in Islamic banking (Ascarya et al., 2021). The method employed in this research is the Analytic Network Process (ANP), complemented by the Delphi method, to systematically analyze the conceptual framework designed based on a literature review. The recommended number of respondents in the Delphi-ANP process is adequate for conducting a Focus Group Discussion (FGD), typically ranging from 6 to 12 participants (Saaty, 2005; Dilshad & Latif, 2013), although 6 to 8 participants may suffice (Nyumba et al., 2018). For smaller-scale FGDs, Rabiee (2004) suggested that 3 to 5 participants are sufficient, especially when the pool of experts in the field is limited."

Referring to Dilshad & Latif (2013), the number of respondents used in this research is eleven experts and seven practitioners. The respondents will consist of nine experts from academic circles and two from regulatory circles, namely the OJK. Additionally, seven practitioner respondents, all experts, are drawn from Sharia Banking circles, including Bank Syariah Indonesia (BSI), Bank Mega Syariah, Bank Panin Dubai Syariah, and Bank Aladin Syariah. The respondents will complete a pairwise comparison questionnaire generated by SuperDecision after receiving input in the form of a model framework.

Delphi and ANP

Delphi was developed in the 1960s by the Rand corporation, a research institute in Santa Monica, California, United States (Dalkey & Helmer, 1963). This method uses a survey-based decision-making approach. There are two survey stages that must be carried out to obtain

consensus opinion from experts. This is done using an intensive questionnaire with feedback in the form of expert opinion or judgment (Ascarya et al., 2017). Dalkey & Helmer (1963) developed this method to eliminate the need for conferences and to obtain expert consensus. Respondents do not need to meet face-to-face, and anonymity is crucial; each respondent does not know who else is participating. The main goal of this method is to achieve the most reliable consensus among a group of experts through a series of intensive questionnaires and controlled opinions. When a group of experts has reached consensus through this process, researchers can identify and prioritize problems and develop a framework."

The Delphi method begins by conducting a literature study of the theme to be researched, including literature regarding supporting theories and literature from previous studies. Based on the literature review, researchers can then construct an initial questionnaire that can be utilized later in the Delphi process, with or without Focus Group Discussions (FGD). This method is rarely used as a standalone research approach. Typically, Delphi is employed as a complement to other methods, such as Delphi-ANP, where previous research is limited or unavailable to support the development of the ANP model and network (Ascarya & Masrifah, 2021).

ANP (Analytic Network Process) represents the next advancement from the previous method, AHP (Analytical Hierarchy Process). ANP is characterized by a qualitative approach that offers a general framework in the form of a network, without imposing hierarchical levels as seen in AHP. Additionally, ANP processes decisions without assuming the independence of elements at different levels or within a level (Saaty T. L., 1999).

In ANP, influence is the central concept. It comprises two components: a control hierarchy or network of criteria and sub criteria governing interactions, and a network of influences between elements and clusters (Saaty T. L., 1999). ANP incorporates both qualitative and quantitative elements. Expert judgment serves as a parameter for certain data (quantitative), and decision-making relies on expert judgment based on expertise and experience under specific conditions (qualitative) (Saaty & Vargas, 2006).

ANP operates on three fundamental principles, as outlined by Saaty (1994): decomposition, comparative judgments, and composition or synthesis of priorities. Decomposition involves breaking down complex problems into a hierarchical framework or network of clusters, sub-clusters, and so forth, within an ANP framework. Comparative assessments are then conducted to establish the local priorities of elements within each cluster, as viewed from the parent cluster, through pairwise comparisons. Composition or synthesis follows, where the local priorities of elements within a cluster are multiplied by the global priority of the parent element. This process yields the global priorities for all elements in the hierarchy, which are then aggregated to determine the global priority for the lowest element, typically an alternative (Ascarya et al., 2017).

RESULTS AND DISCUSSION

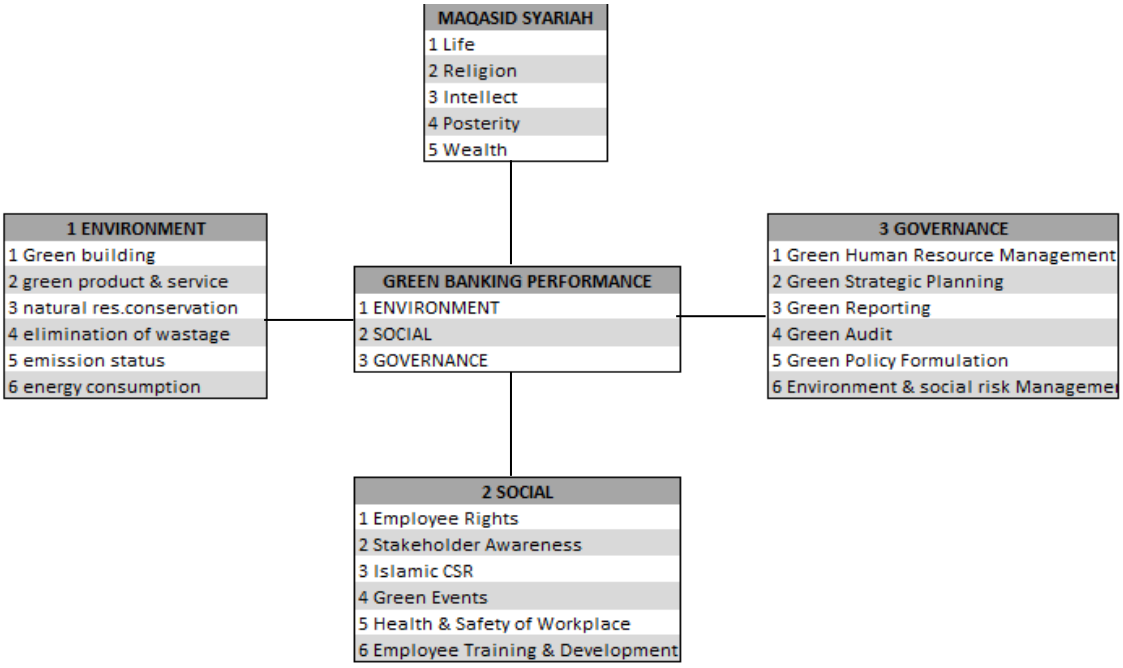
Results

The results of this research will be presented in two parts. The first part will explain the Delphi results, demonstrating the level of agreement among all respondents regarding factors related to the GBMI model. Following this, the ANP results will be presented, showing the priority order and weight of each element in the Maqasid Sharia category, including main criteria and sub-criteria.

Delphi

The main purpose of using the Delphi method in this research is to confirm the cluster and its elements. Maqasid sharia is positioned as the objective cluster or main goal to be achieved from implementing GB practices in banking.

Figure 5. GBMI Model



Then ESG in the main criteria cluster that must be met to achieve maximum GB performance. The variables that will influence the main criteria each consist of six items that are related to each other.

The results of calculating Kendall's coefficient of concordance (w) or rater agreement from 11 experts and 7 practitioners, which shows the level of agreement of the respondents regarding the model can be seen in table 1.

Table 1. Rater Agreement from the Delphi Method Results

No	Cluster	Rater Agreement (*Kendall W*)					
		Pakar	**Nilai P**	**Praktisi**	**Nilai P**	**Semua**	**Nilai P**
1	Objective	**0,30**	0,01***	**0.88**	0,00***	**0,48**	0,00***
2	Criteria	**0,23**	0,08*	**0,39**	0,07*	**0,28**	0,01***
	Sub-criteria Environtment	**0,41**	0,00***	0,14	0,43	**0,27**	0,00***
	Sub-criteria Social	0,07	0,60	**0,34**	0,04*	**0,13**	0,04*
	Sub-criteria Governance	**0,42**	0,00***	**0,44**	0,01***	**0,32**	0,00***

*** significant at the 0,01 level; ** significant at the 0,05 level;
*significant at the 0,10 level

Of the five clusters evaluated, the Delphi results showed that expert and practitioner respondents each achieved 80% consensus. Both groups agreed on four distinct clusters, with experts disagreeing on the social sub-criteria and practitioners disagreeing on the environmental sub-criteria.

Meanwhile, the Delphi results from the combined responses of expert and practitioner respondents demonstrated 100% consensus across all clusters for the rater agreement value (Kendall W). These results meet the Delphi requirements outlined by Miller (2006), which stipulate a minimum consensus figure of 70%. These findings will serve as the basis for the subsequent ANP processing stage.

ANP

The requirement for ANP results includes a consistency value, with a maximum allowed level of inconsistency of 10% (Saaty, 2005). Meanwhile, there is no minimum requirement for the convergence value of rater agreement (Kendall W). The ANP results for the objective cluster, serving as the main objective of implementing GB in Sharia Banking, are presented in table 2. According to the combined responses of all respondents, the most important objective is Religion or guarding religion (0.3062), followed by Life or guarding the soul (0.2078), and Intellect or guarding the mind (0.2051).

Table 2. ANP Results on the Objective Cluster

Objective	Respondent			Rank All
	Expert	**Practicioner**	**All**	
1 Religion	**0,3467**	**0,3582**	**0,3062**	**1**
2 Life	**0,1951**	0,1369	**0,2078**	**2**
3 Intellect	0,1916	**0,2312**	0,2051	**3**
4 Posterity	0,1333	0,1369	0,1435	
5 Wealth	0,1333	0,1369	0,1375	
Consistency	**0.002*** **	**0.01*** **	**0.002*** **	
Kendall's W	**0,772*** **	**0,886*** **	**0,759*** **	
X2	33,96	24,80	54,67	
P-value	0,000	0,000	0,000	

*** significant at 0.01 level; ** significant at 0.05 level; * significant at 0.10 level

Meanwhile, there are slight differences in the answers among groups of respondents. The group of expert respondents provided answers in the same priority order as the combined responses of experts and practitioners. However, the practitioner group's answers differed slightly in the second priority order, with intellect or guarding the mind (0.2312) taking precedence, followed by the protection of soul, offspring, and property, each receiving the same weight value. Despite these discrepancies, the results exhibit robust consistency and reach consensus in terms of priority, as evidenced by a significant Kendall W value across all groups of answers, mirroring the findings of the Delphi results.

The ANP results for the main criteria cluster are presented in table 3. According to the combined responses of all participants, the most important criterion is Environment (0.4312), followed by Social (0.3390), with Governance (0.2298) being the least prioritized. Remarkably, this priority order aligns with the responses from both the expert and practitioner groups. Furthermore, these results demonstrate robust consistency and consensus, as indicated by significant Kendall W values across all respondent groups—experts, practitioners, and combined. Notably, these findings are consistent with the results of the Delphi consensus calculation for the main criteria categories.

Table 3. The ANP Results on The Main Criteria Cluster

Criteria	Respondent			Rank All
	Expert	Practicioner	All	
Environment	**0,4145**	**0,4674**	**0,4312**	**1**
Social	**0,3671**	**0,2937**	**0,3390**	**2**
Governance	0,2184	0,2389	0,2298	3
Consistency	**0.008*** **	**0.000*** **	**0.002*** **	
Kendall's W	**0,752*** **	**0,633** **	**0,522*** **	
X2	16,55	8,86	18,78	
P-value	0,000	0,012	0,000	

*** significant at 0.01 level; ** significant at 0.05 level; * significant at 0.10 level

The ANP priority and weighting results for the combined sub-criteria clusters are presented in table 4. Out of a total of 18 existing variables, six are identified as the most important. Topping the list is Green Human Resource Management (0.075), followed by Health and Safety of Workplace (0.0718) in second place, and Green Products and Services (0.0707) in third. Next, Green Strategic Planning (0.0697) secures the fourth position, followed by Elimination of Waste (0.0658) in fifth place, and Employee Training and Development (0.0590) in sixth. These results exhibit robust consistency and consensus, with a significant Kendall W value observed in both the combined and practitioner group answers.

Table 4. The ANP results on all sub-criteria clusters

Sub-criteria	Respondent			Rank All
	Expert	Practicioner	All	
Environment				
1 green building	0,0402	0,0558	0,0448	

2 green product & service	**0,0741**	**0,0602**	**0,0707**	**3**
3 natural res.conservation	0,0529	0,0486	0,0586	
4 elimination of wastage	**0,0774**	0,0542	**0,0658**	**5**
5 emission status	0,0334	0,0457	0,0400	
6 energy consumption	0,0484	**0,0636**	0,0569	
Social				
1 Employee Rights	0,0321	0,0495	0,0503	
2 Shareholder Awareness	0,0384	**0,0521**	0,0587	
3 Islamic CSR	0,0407	0,0492	0,0419	
4 Green Events	0,0465	0,0391	0,0518	
5 Health & Safety of Workplace	**0,0647**	**0,0502**	**0,0718**	**2**
6 Employee Training & Development	**0,0529**	0,0325	**0,0590**	**6**
Governance				
1 Green Human Resource Management	0,0528	**0,1057**	**0,0755**	**1**
2 Green Strategic Planning	**0,0821**	**0,0829**	**0,0697**	**4**
3 Green Reporting	0,0474	0,0469	0,0339	
4 Green Audit	0,0560	0,0440	0,0392	
5 Green Policy Formulation	**0,0930**	0,0490	0,0550	
6 ESRM	0,0669	0,0708	0,0563	
Consistency	**0,03****	**0,09***	**0,02****	
Kendall's W	**0,125**	**0,291*****	**0,105*****	
X2	23,33	34,63	32,03	
P-value	0,140	0,010	0,010	

*** significant at 0.01 level; ** significant at 0.05 level; * significant at 0.10 level

The ANP processed results obtained from the combined answers of expert and practitioner respondents will then be used as weighting material in the Green Banking Maqasid Index (GBMI).

Weighting Results on Environment, Social dan Governance

Based on the results of data processing from the ANP method, a summary of the Green Banking Maqashid Index (GBMI) calculation was obtained. Overall, the weight of the three aspects with each sub-aspect can be seen in table 5.

Table 5. Weight of aspects and sub-aspects of GBMI

BOBOT ASPEK		BOBOT SUB-ASPEK		RASIO
ASPEK	**BOBOT**	**Sub-Aspek**	**bobot**	
Environment	W_1 = 0,43	E1.Green building	E_1 = 0,133	IE_1
		E2.Green product & service	E_2 = 0,210	IE_2
		E3.Natural resource conservation	E_3 = 0,174	IE_3
		E4.Elimination of wastage	E_4 = 0,195	IE_4
		E5.Emission status	E_5 = 0,119	IE_5
		E6.Energy consumption	E_6 = 0,169	IE_6
		E-Total	**1**	

Social	W_2 = 0,34	S1.Employee rights	S1 = 0,151	IS_1
		S2.Stakeholder awareness	S2 = 0,176	IS_2
		S3.Islamic csr	S3 = 0,126	IS_3
		S4.Green events	S4 = 0,155	IS_4
		S5.Health&safety of workplace	S5 = 0,215	IS_5
		S6.Employee training & development	S6 = 0,177	IS_6
		S-Total	**1**	
Governance	W_3 = 0,23	G1. Green HRM	G1 = 0,229	IG_1
		G2. Green strategic planning	G2 = 0,212	IG_2
		G3. Green reporting	G3 = 0,103	IG_3
		G4. Green audit	G4 = 0,119	IG_4
		G5. Green policy	G5 = 0,167	IG_5
		G6. E&S risk management	G6 = 0,171	IG_6
		G-Total	**1**	
TOTAL	**1.000**			

Ideally, the implementation of the Green Banking Maqasid Index (GBMI) incorporates all elements from the three aspects: Environment (6 elements), Social (6 elements), and Governance (6 elements). However, as a first step, GBMI can be partially implemented by initially focusing on three elements for each criterion, for instance.

Discussion

Delphi-ANP Result

The primary distinction between this research and the previous one lies in the weighting results of each maqasid, the main criteria, and sub-criteria, which can subsequently inform the calculation of performance assessments in Sharia Banking. Therefore, it is crucial to elucidate the results of the analysis of the Analytic Network Process (ANP) weighting. Before delving into the ANP results, it is important to first outline how we will discuss the findings of the Delphi consensus calculation. In analyzing the responses from both expert and practitioner groups, discrepancies emerged. Specifically, the Delphi calculations conducted by the expert group did not align with the social cluster, whereas those conducted by the practitioner group did not reach a consensus regarding the environmental cluster. These disparities will be further explored in the subsequent discussion.

The explanation provided by the experts highlights that disagreements within social clusters can manifest in any cluster due to several factors, including the respondents' diverse understanding backgrounds and areas of expertise. When such discrepancies arise within the social cluster, they often stem from differences in the underlying understanding backgrounds of each expert. For instance, experts inclined towards specific ideologies like Marxism may prioritize variables associated solely with employee welfare in their responses. Conversely, experts with alternative viewpoints may adopt different perspectives. Consequently, these varying interpretations inevitably hinder the Delphi calculations from reaching a consensus.

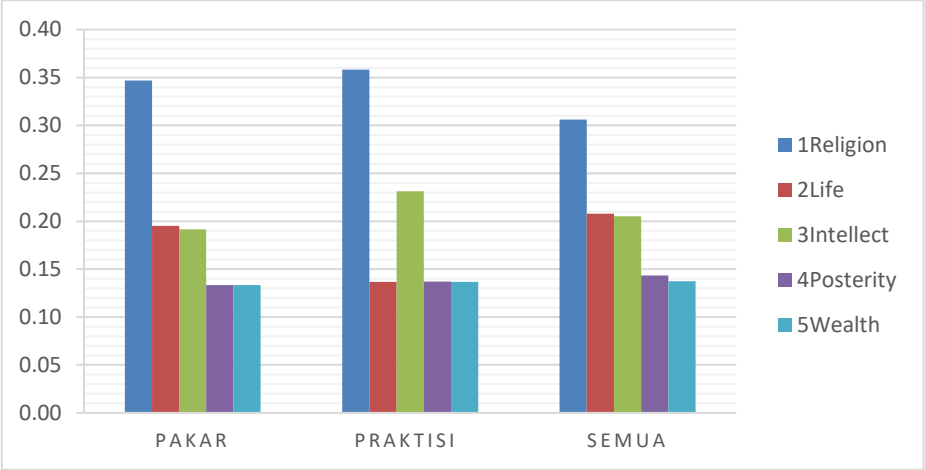
Practitioners provided insight into the disagreement surrounding the environmental cluster, attributing it primarily to challenges related to implementation in the field. They highlighted that Islamic banking currently faces limitations in applying all variables within the environmental cluster due to the perceived high costs involved. For instance, implementing green buildings would necessitate banks to overhaul the designs of all their branch offices to

meet environmentally friendly standards, a costly endeavor that presents practical difficulties at present.

In the Objective cluster, experts and practitioners hold differing perspectives on the order of priorities, as illustrated in Figure 0.6. Nonetheless, across all respondents, preserving religious principles remains the foremost priority. Interestingly, practitioners prioritize safeguarding the mind over safeguarding the soul as their second preference, a departure from the ranking endorsed by experts and the combined responses, which align with the order articulated by Imam Ghazali, placing soul protection second.

The order of priority from first to fifth differs slightly among the various groups of answers. The expert answers and combined responses share a similar order, namely 1, 2, 3, 4, and 5, aligning closely with the hierarchy of Maqasid Sharia as delineated by Imam Ghazali. However, the practitioners' responses exhibit a slight variance in priority order, listed as 1, 3, 2, 4, and 5.

Figure 6. Graph of ANP results on the objective cluster

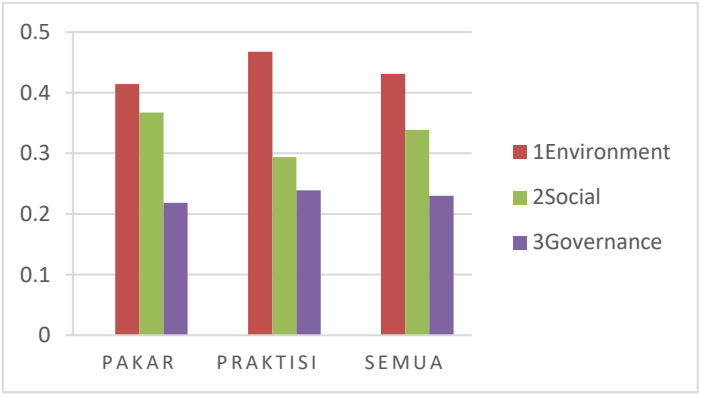


The discrepancy observed in priority orders between this research and Chapra's (2008) findings is notable. Chapra's priority order, stated as 2, 1, 3, 4, 5, differs from the this research's findings. However, it's important to note Chapra's perspective, which underscores the interdependence of the five objectives in achieving human welfare. Moreover, Chapra emphasizes the flexibility of adjusting the order of objectives based on the specific problem under discussion.

The practitioner's view is that safeguarding the mind is important after safeguarding religion in relation to the implementation of banking business processes. To become an advanced financial institution capable of generating profits and facilitating smooth business processes, banking requires the right strategy, which is, of course, related to maintaining common sense.

Furthermore, the Analytic Network Process (ANP) results for the three main aspects in the GB performance measurement criteria of Sharia Banking show agreement. The priority order of responses from experts, practitioners, and combined answers is depicted in Figure 7.

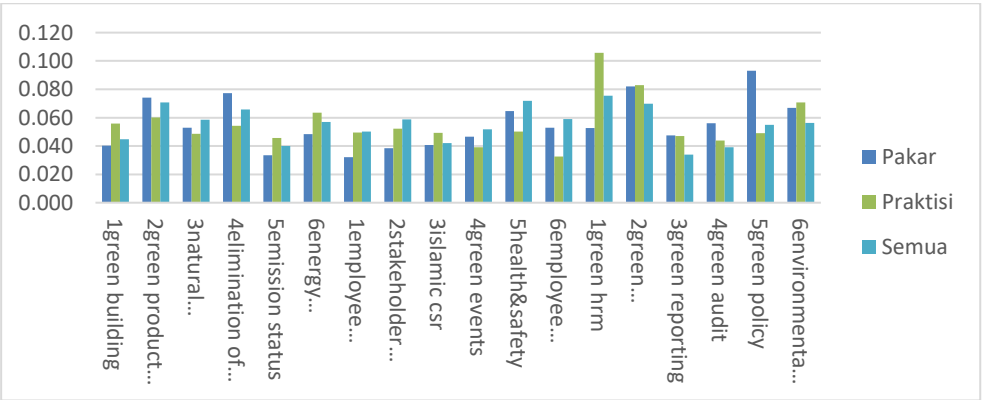
Figure 7. Graph of ANP results on the main criteria cluster



In the combined answers of experts and practitioners, the Environmental aspect (0.4312) was given the highest priority, followed by the Social aspect (0.3390), and lastly Governance (0.2298). These results align with Senadheera et al. (2021), which emphasizes the importance of scoring or assessing the environmental pillar. This environmental score indicates the impact of industrial activities on the environment, considering factors such as water and natural resource management, fossil fuel usage, carbon footprint, hazardous waste disposal, and more.

The environmental pillar holds significant importance as the primary objective of implementing Green Banking (GB) in Islamic banking, as well as the focus of this research, is to address environmental issues associated with climate change, as discussed in the introduction. However, it's crucial to note that this emphasis on the environmental aspect doesn't diminish the importance of the social and governance pillars. These three pillars are interconnected and collectively influence the sustainability, financial stability, and reputation of an industry or institution (Suryomurti, 2017; Chang et al., 2021).

Figure 8. Graph of ANP results on the combined Sub-criteria cluster



Furthermore, in the sub-criteria cluster, there are differences in the priority order of responses from experts, practitioners, and a combination of both, as depicted in Figure 0.8. Among the combined answers of experts and practitioners, six variables emerge as the most important out of a total of 18 existing variables. Firstly, green Human Resource Management

(0.075) takes the top spot, followed by workplace health and safety (0.0718) in second place, green products and services (0.0707) in third place, green strategic planning (0.0697) in fourth place, elimination of waste (0.0658) in fifth place, and Employee Training and Development (0.0590) in sixth place

Based on these results, green Human Resource Management (HRM) emerges as the primary priority in assessing Green Banking's (GB) performance. Green HRM is recognized for its ability to assist companies in enhancing their environmental and social performance by offering motivation, training, and activities related to sustainable finance to employees. According to Saeed et al. (2019), green HRM practices can shape employees' pro-environmental attitudes by integrating long-term strategies and incorporating environmentally friendly commitments and attitudes into the company's HRM practices, thus contributing to the company's sustainability goals

Several studies highlight the significant role of green HRM. Liu et al. (2023) emphasize its importance in achieving sustainable development by influencing a company's sustainable performance. Ahmad et al. (2021) discuss its role in fostering green creativity (GC) among workers, where GC is the development of new ideas for green products, services, and processes crucial for innovation and sustainability. Additionally, Saifulina et al. (2020) suggest that companies should adopt green HRM practices to effectively implement green policies within their organizations.

The emphasis on workplace health and safety, identified as the second priority in this research, aligns with the findings of Sultana et al. (2018), who underscore this element as a crucial social issue and a determinant for investors when selecting companies for investment. Similarly, the prioritization of green products and services resonates with the observations of Sharma & Choubey (2022), who highlight the significance of this aspect in building customer trust in implementing Green Banking (GB) practices.

The perspective of Islamic banking practitioners regarding this matter is that both green HRM and green policy variables are equally important and mutually supportive. When a Sharia bank aims to comply with a new regulation set forth by regulators, Sharia banks require internally designed guidelines to direct employees in their implementation.

In this case, it is necessary to design an appropriate green policy for the bank. However, in the end it is the employees who will implement this policy. Thus, without effective HRM practices, the policy cannot align with stakeholder expectations. Consequently, embracing green HRM is crucial to guarantee the successful implementation of green policies within companies.

CONCLUSION

The application of Green Banking (GB) practices in Sharia Banking is mandatory, driven by both government regulations and the pursuit of Sustainable Development Goals (SDGs). Additionally, it's essential for Sharia banks to align with Sharia principles or achieve Sharia compliance. This research aims to develop a Maqasid index for the implementation of GB practices. This index will serve as a tool to assess the extent to which Sharia Banking has integrated these practices into its operations.

To develop this index, Delphi-ANP methodology was employed to validate the model, clusters, and their elements, and to determine the weight and priority of each element. The Delphi process results demonstrate a 100% consensus from the combined responses of experts and practitioners regarding the proposed clusters and elements, as indicated by the significant rater agreement value. The Analytic Network Process (ANP) results reveal the order of priority and weighting as follows. The order of priority and weight of the goals of maqasid sharia is

religion (0.306), life (0.207), intellect (0.205), posterity (0.143), and wealth (0.137). The order of priority and weight of the ESG categories is environment (0.43), social (0.34), and governance (0.23). Then the order of priority and weight in the ESG sub-criteria category, indicates that out of the 18 existing variables, six variables were identified as important priorities, these includes green HRM (0.075), health & safety of workplace (0.072), green product & service (0.070), green strategic planning (0.069), elimination of waste (0.065) and employee training & development (0.059). Furthermore, for GBMI to be utilized, Sharia Banking must first record and report data related to the 18 existing variables. As a starting point, the implementation of GBMI can be initiated in parts, such as by attempting to apply three elements from each aspect of Environment, Social, and Governance.

If Green Banking Maqasid Index (GBMI) is adopted by banks and regulators, then the results of the calculations are published periodically, the bank that demonstrates the best implementation receives an award, while the one that performs poorly receives a warning. This approach would incentivize the Sharia banks to strive towards being the most environmentally friendly. Simultaneously, the public especially customers, would gain a transparent understanding of the extent to which Sharia banks have incorporated sustainability principles and their impact on social and environmental aspects. Thus, by providing the public with the information needed to make informed choices, individuals can select Sharia banks that prioritize and positively impact social and environmental aspects. This mechanism will undoubtedly incentivize Sharia banks to further prioritize the implementation of Green Banking practices in their operations. The desire to cultivate a positive reputation among the public, particularly customers, will drive Sharia banks to enhance their commitment to sustainability and responsible practices. Consequently, the implementation of GB in Sharia Banking in Indonesia is expected to improve further. With banks competing to become the most sustainable in their operations.

This research has several limitations, including the insufficient number of respondents and a limited model framework and variables, which are still confined to 18 variables. Additionally, the Sharia Maqasid used in this research are based on Al-Ghazali's perspective. However, there are other Sharia Maqasid proposed by different scholars that could be applied in developing a Green Banking index based on Sharia principles.

From the results of the research and discussion above, there are several important points that can be recommended in this research, including for Sharia banking regulators, the implementation of Green Banking (GB) principles should be included as part of the assessment of Sharia-compliant banks. Additionally, regulators can utilize the GBMI to calculate the performance of Sharia banks in Indonesia and then publish the results to the public. For Sharia banking, as a first step, it is best to provide Standard Operating Procedures (SOPs) as a guide for carrying out GB practices. Then, to support the availability of data for calculating and measuring GB performance, Islamic banking practitioners are expected to provide reports related to GBMI calculation indicators, which should be updated periodically. Additionally, Sharia banking should also pay attention to the extent to which the GB performance index has been achieved in respective Sharia-compliant banks.

Further research could employ alternative methods to develop a more comprehensive measurement model, broaden the scope and increase the number of respondents. Additionally, researchers could consider applying the Maqasid Sharia framework from other Islamic scholars such as Abu Zahra or Al-Najjar.

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