

Constructing an Environmental, Social, And Governance (ESG) Index for Islamic Social Finance Institutions: Empirical Investigation from Indonesia

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Abstract

This study constructs an index to measure the performance of Islamic Social Finance (ISF) Institutions based on Environmental, Social, and Governance (ESG) dimensions. This quantitative research employs the Delphi Analytical Network Process (DANP) and Multistage Weight Index (MWI). The index is constructed using DANP, conducting empirical assessments using MWI, then developing indicators using Focus group discussion (FGD), in-depth interviews, and structured surveys. This study also empirically tests index's implementation on five ISF institutions in Indonesia. The high score of the governance factor in this study indicates that the five ISF institutions are still focused on enhancing governance. This ESG index for ISF institutions create in this research may cannot be applied generally to other nations or institutions. But this ESG-building indicators still can be utilized as a reference for adopting ESG in other institutions. This study contributes to the literature by creating an ESG index for ISF institutions, where more research is needed. The notion of ESG is connected to maqashid sharia and is particularly essential in how institutions execute good governance and social issues while focusing on environmental protection.

Keywords: D-ANP, ESG, Index, ISF, Indonesia.

Introduction

Although the development of ISF instruments has expanded year after year, this phenomenon has yet to be matched by the progress of assessment tools that can holistically quantify institutional performance (Puskas BAZNAS, 2022). So far, measurement of the performance of Islamic philanthropic institutions has been carried out partially and has ruled out integration aspects between instruments.

The National Zakat Index (IZN) for Amil Zakat Institutions (LAZ), the National Waqf Index (IWN) for waqf management institutions, and the Cooperative Health Check Paper (KKPKK) for IKMS inspection and supervision are all known standards and indexes in Indonesia. The aforesaid measuring standards and indices must still be thoroughly examined to determine the impact of merging different ISF instruments.

The created performance measuring standards and indexes consider various economic, social, and governance factors. However, they must still explore other critical issues, such as environmental sustainability. Some performance measures employ the *maqashid sharia* method (Ramadhita et al., 2022; Rusydianan et al., 2022), which covers religion, life, mind, lineage, and property preservation but gives little regard to the objectives of environmental protection or *bifdzul al bi'ah*. The availability of ESG indicators in ISF, such as zakat institutions, is crucial because it may become one of the measuring tools for how

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successfully *maqashid sbaria* is applied at a macro level in ISF institutions as well as ISF institutions' impact on the environment (Hassan et al., 2021). Economic activities focused on growing output without respect for the surrounding environment degrade environmental quality.

Islam forbids its followers to carry out activities that cause damage, including damage to the environment (QS Al-Baqarah [2]: 11; QS Al- A'raf [7]: 56 & 85). Using renewable energy sources is one of the initiatives to decrease carbon emissions; however, the application needs to be uniformly distributed, and poor restrictions prevent carbon emission reductions from being applied efficiently (Jia et al., 2022; Tian et al., 2022). Although zakat traditionally focuses on social welfare, modern interpretations and applications of Islamic principles encourage environmental stewardship as part of the broader concept of responsibility (*amanah*) (Isman et al., 2023). Zakat institutions, by adopting ESG principles, can ensure that their operations and investments do not harm the environment and that they contribute positively to ecological sustainability. This includes promoting sustainable development projects, supporting environmentally friendly practices, and ensuring that zakat funds are used in ways that consider the long-term health of the planet.

Emerging socioeconomic concerns, such as social inequality and restricted access to health care for low-income individuals, remain each country's responsibility (S. Y. Kim, 2022). According to Global Wealth Report 2021 (Credit Suisse, 2021), 1.1% of the world's population holds 45.8% of global wealth. Unfortunately, 55% of the population with less than \$10,000 owns just 1.3% of global wealth. Low-income people cannot achieve their nutritional needs due to a lack of cash. They also suffer more health risks than the wealthy since the impoverished have more difficulty receiving timely and proper health care (Yang et al., 2022). The poor have a lower life expectancy than the rich due to inadequate access to health care (Valero & Valero-Gil, 2021) and a greater mortality rate during the COVID-19 pandemic (Khayat et al., 2022). According to The World Count (2022) research, children from disadvantaged areas are more prone to pneumonia, diarrhea, and malaria. Furthermore, it is anticipated that 56 million children under five will die due to economic troubles between 2019 and 2030.

Zakat institutions contribute significantly to the social aspect of ESG through their efforts in eradicating poverty (Bouanani & Belhadj, 2020), empowering the economy (Ben Jedidia & Guerbouj, 2021), supporting education (Adebayo Saheed Adewale & AbdurRaheem Abdul Ganiyi Zubaedy, 2019), improving public health (Chotib, 2021), and promoting social justice (Zauro et al., 2020). This role not only helps improve social conditions in society but also strengthens the fundamental social values within the ESG framework. In summary, Zakat institutions linked with the social dimension of ESG. These institutions are designed to address social inequalities and provide essential support to marginalized communities. By integrating ESG principles, zakat institutions can enhance their impact by adopting more structured, transparent, and effective methods for managing and reporting their social contributions. This not only improves their accountability but also maximizes the positive outcomes for beneficiaries.

Corruption is a sort of organizational governance deviance. According to Transparency International (2021), six of the twelve nations with the worst levels of corruption are members of the Organization of Islamic Cooperation (OIC). Furthermore, none of the 20 nations with the lowest levels of corruption are OIC members. This scenario is quite concerning since corrupt behavior violates Islamic norms (QS. Al-Baqarah [2]: 188; QS. An-Nisa [4]: 29; QS. Al-Maidah [5]: 38; QS. Al-Anfal [8]: 27). Regrettably, zakat institutions also document corruption instances. An example of this is the corruption case that involved the former Chairman of the National Zakat Agency (Baznas) in East Tanjung Jabung, leading to a payout of 76,400 USD (Sanjaya, 2023). The case of misappropriation shows how important good governance is in zakat institutions.

Despite the ESG narrative being extensively studied for years, only a few organizations are focused on incorporating an ESG component into their management. For a variety of factors, including the yet-to-be-believed ESG in all economic entities, primarily non-profit institutions, ESG has not yet yielded its full potential (Saxena & Singh, 2016). Simultaneously, it is imperative to consider ESG, as it is one of the criteria that is frequently employed as a criterion in the implementation of SDGs. SDGs are a framework that evaluates the extent to which a company's products, services, or programs have a beneficial effect on

environmental, socioeconomic, and business governance elements. Consequently, ESG is one of the SDG attributes. ESG emphasizes the significance of organizations emphasizing these three pillars over solely profit, acknowledging that the world (environment) and humans (people) are also essential for the establishment of sustainability and profitability.

This research aims to develop an instrument for assessing the performance of zakat institutions, one of non-profit institutions, based on ESG dimensions. This study employs both qualitative and quantitative methods. First, this qualitative study employs the Delphi - Analytic Network Process (DANP) approach. Second, this work uses a quantitative technique to conduct empirical investigations on instruments constructed utilizing zakat institution objects using the Multistage Weighted Index (MWI).

There are several new aspects to this topic. First, pioneering ESG indicators for Zakat institutions. This study presents an innovative approach to Environmental, Social, and Governance (ESG) measures adapted particularly for zakat organizations. While ESG indicators are widely established in corporate contexts, their use in Islamic charity organizations, such as zakat institutions, constitutes a significant step forward. The second step is to integrate Islamic ideas with ESG. The study is unusual in that it mixes Islamic economic ideas, notably those based on eco-humanism, with current ESG frameworks. This combination of religious principles and current environmental techniques makes a unique addition to both Islamic finance and ESG literature. Third, develop a thorough ESG computation model. Innovative aspects include the creation of a new ESG performance calculation methodology that zakat institutions may use to analyze and enhance their operations and effect. This concept might serve as a template for other Islamic groups looking to improve their social and environmental impact. Finally, this study focuses on eco-humanism in an Islamic framework. The Islamic stance on eco-humanism, a term that emphasizes the link between human well-being and environmental stewardship, is relatively unknown territory in extant literature. This component of the research offers a new perspective on the obligations of Islamic charitable organizations.

Literature Review

Sustainability Theory

Sustainability is derived from the word *sustain*, which implies maintaining, supporting, or upholding something and supplying it with necessities. In sustainability, the sustained objectives comprise the critical components of a healthy economy, society, and environment that operate throughout time (Hackett, 2006). The World Commission on Environment and Development (1987) defines *Sustainable Development* as development that satisfies the requirements of the present without jeopardizing future generations' ability to meet their own needs.

Sustainability entails developing or achieving potential or bringing something to a better condition. As a result, economic development differs from economic growth, which refers to a rise in GDP adjusted for inflation. Therefore, sustainable development is regarded as required support for the functional aspects of the economy, society, and environment to realize their maximum potential (Hackett, 2006). From a business standpoint, sustainability and profit have a complementary connection in which investors consider a company's long-term and short-term viability (Hill, 2020). Whether or not it is conceivable to sustain infinite economic expansion, fostering sustainable development must be achievable and desired by all parties.

ESG History and Concept

The ESG dimension is a concept that encourages sustainable development/investment/business operations by focusing on significant major factors: environmental, social, and governance. As a result, all kinds of financial services company activity and decision-making should thoroughly apply the concepts of environmental preservation, social responsibility, and good governance (Otonitas Jasa Keuangan, 2018). This ESG narrative has existed for a long time but has yet to be applied entirely in society. Meanwhile, several present situations need the quick implementation of ESG because the ESG themselves help to achieve the SDGs', primarily related to the commercial, financial, and economic sectors.

With the global adoption of ESG risk disclosure legislation and policies over the last decade, all key stakeholders, including investors, require agencies to have a transparent and accountable public disclosure and reporting framework for identifying and quantifying ESG risks and reporting. In addition to measuring companies' risks, ESG reporting will provide benefits such as including these risks and possibilities in their future strategic objectives (De Silva & De Silva Lokuwaduge, 2021).

ESG is commonly connected with ethical and socially responsible investing (S. Kim & Li, 2021). ESG provides a financial incentive for corporations to contribute to the SDGs. Investment decisions based on ESG and sustainability seek to deliver long-term value for businesses and society. While this report aims to share information with the public by enhancing openness and emphasizing their commitment to investing in sustainable practices, this disclosure may need to appropriately reflect company operations in the larger picture (Katterbauer et al., 2022).

There are still particular challenges in the development of ESG issues. One is that most agencies segregate the ESG component from management activity implementation (Cousins, 2015). ESG should be the firm's core business strategy to identify which areas positively influence the three components and monitor how far the company is applying sustainable practices (Katterbauer et al., 2022). For example, banks that include ESG elements in their credit allocation rules and risk assessment techniques might leverage their strengths to shift the company's primary strategy toward more sustainable and responsible investments (Kashi & Shah, 2023).

The ESG idea is strongly tied to Islamic economic concepts (Ansari & Alanzarouti, 2020b). The most fundamental idea in Islamic economics is to achieve *maslahah* circumstances, in which economic activity must bring long-term benefits and blessings while remaining within the justice framework (Beik, 2022). This ideology is comparable to the purpose of having an ESG, which focuses on balancing circumstances between a preserved environment and excellent social conditions while maintaining acceptable activity governance performance.

Public entities, the corporate sector, and ISF institutions must all contribute to proving that Islam is *rabmatan lil 'alamin*. ISF institutions must also consider this while administering community funds, which are the rights of those in need, without compromising environmental responsibility or good governance.

Islamic Social Finance Concept

Islamic Social Finance (ISF) primarily comprises traditional Islamic institutions with a charitable basis, such as zakat, alms, and endowments; those based on cooperation, such as *qardh* and *kafala*; and Islamic microfinance organizations aimed at alleviating poverty (IRTI, 2020). This hypothesis is supported by a prior study (IRTI, 2014), which revealed that the ISF sector contains organizations and mechanisms that adhere to *Sharia* norms. The ISF sector comprises Islamic institutions that use a business model to cover costs and expand operations.

One type of social finance in Islam is a philanthropic organization that handles zakat. Zakat can be translated as holy, honorable, and pure. Several implications may be noticed in QS At-Taubah: 103, which revealed that humans providing zakat and *sadaqah* signify that they have purged themselves from sin and enlarged their benefits and prosperity (Wahbah Az-Zuhaili, 2011).

Islamic finance relies on Islamic principles with a solid social foundation to generate a target of strong religious values in society. These concepts may be found in the Qur'an, Sunnah, and the secondary *Sharia* law rules. One of the critical economic problems with Islamic banking in today's fast-paced changes is to build a more equitable and sustainable financial framework for global economic growth and health. Obaidullah (2008) explains that Islamic finance has a specific direction for microfinance which has been discussed for dozens of years by developed countries. Microfinance is considered one of the most potent poverty alleviation instruments.

The Inter-connection between ESG and ISF

ISF makes it possible to take advantage of the similarity of principles with sustainability finance as a place to spread green finance elements. The fundamental objectives of ISF and sustainable finance are similar: economic growth, poverty reduction and wealth distribution, financial and social inclusion, and environmental preservation (Irum Saba et al., 2019). Islamic finance and ESG investment are positive ways to capital raising and investing that share many core values, such as being good stewards of society and the environment. Although both approaches evolved under distinct cultural situations and historical times, they share more similarities than differences, provide goods to Muslim and non-Muslim investors, and have solid practices and policies that may be learned from one another (Ansari & Alanzarouti, 2020a). Concerning a distinction between ISF and ESG, in general, are the *Sbaria*-based constraints that ISF possesses to avoid doing illegal things.

PIMCO in Hill (2020) observed various aspects that take into account ESG: 1) the importance of good governance for corporate sustainability; 2) public knowledge of climate change; 3) technology; and 4) social media. As an institution, ISF must consider ESG since ISF needs community trust to handle the social fund.

Previous research attempted to analyze the relationship between ISF and the concept of Sustainable Development Goals (SDGs) and ESG, which are developments from SDGs. Ansari & Alanzarouti (2020) reveal a trend that Muslim investors are pursuing sustainable risk-adjusted returns on investment. Thus, it is possible to integrate ESG factors into their decision-making in the future. In addition, investors are actively involved in improving investment performance and aligning their financial, social, and environmental goals.

Sawmar & Mohammed (2021) emphasize that good zakat governance substantially impacts the success of accomplishing zakat goals. A solid governance structure also influences *muzakki's* compliance with zakat distribution. Good governance will strengthen *muzakki's*, *mustabiq's*, and other parties' trust in the ISF institution. Jouti (2019) research emphasizes the necessity of integration in developing a sustainable ISF ecosystem, mainly considering the ESG concept.

Abdullah (2018) revealed that most of the goals summarized in the SDGs points are related to the objectives of the waqf instrument. In addition, global waqf has excellent financial potential in helping Muslim-majority countries realize SDG points based on *maqasbid sbaria*. This fact strengthens the linkage of waqf with the concept of ESG in the future.

Obaidullah (2015) discover the vital role of IKMS in providing financial and non-financial support to farming communities. In addition to empowering farming communities, this IKMS assistance can also increase the food stocks the community needs. This support aligns with the SDG and ESG goals, namely social welfare and good governance in social institutions. From these various studies, research needs to specifically discuss the impact of integrating multiple ISF instruments in achieving the objectives of the ESG concept.

ESG and ISF measurements

In Indonesia, several performance measurement indices exist for managing ISF instruments. This index/measurement is issued by management institutions and scholars that specialize in their respective fields. These indexes include:

- *The National Zakat Index*, developed by the National Zakat Agency (BAZNAS), measures the success of the Zakat administration. This statistic assesses the Zakat's success on macro (regulatory and government support) and micro (*mustabiq* condition) levels.

- *The Zakat Village Index* is an assessment instrument developed by BAZNAS to determine a village's eligibility for empowerment support using Zakat payments. The index measures numerous elements, including the economy, health, education, and social humanity.
- *The Zakat Utilization Index* is a BAZNAS index that measures the success of zakat on *mustabiq* with more diversified factors such as social, cultural, economic, *da'wah*, and environmental issues.
- *Centre of Islamic Business and Economics Studies (CIBEST) Welfare Index* is used to quantify the impact of applying productive zakat via the material and spiritual dimensions of *mustabiq* (Beik & Arsyanti, 2016).
- *Success Factors of Asnaf Entrepreneurs* combine several indicators of measuring the success of zakat on *mustabiq* in 5 dimensions: financial performance, non-financial, life-improvement, material aspects, and spiritual (Bahri et al., 2021).
- *The National Waqf Index (IWN)* measures the performance of waqf management in 6 pillars, namely regulations, institutions, processes, systems, outcomes, and impacts.

Investors are starting to pay attention to ESG performance as a parameter for determining investment portfolios (Mansouri & Momtaz, 2022). Aside from the fact that investors prefer to invest in companies that have good ESG performance, many large companies listed on the stock market issue ESG reports because ESG reporting has a significant effect on stock prices (Li et al., 2022), even loosening financing constraints and increasing stock liquidity (Lai & Zhang, 2022).

The positive impact of ESG measurement encourages the development of ESG measurement for various types of businesses. Such as banking (Gunawan et al., 2022), the financial industry (Bengo et al., 2022), digital start-ups (Mansouri & Momtaz, 2022), crowdfunding (Vismara, 2019) entrepreneurs' self-classification as “environmentally oriented” on the crowdfunding platforms (Hörisch, 2015), search engine company (Guzmán et al., 2020), multinational enterprises (MNE) and emerging market multinational enterprises (EMNEs) (Linnenluecke, 2022), and agriculture company (Makarenko et al., 2022). Although many profit-oriented firms have adopted and publicized ESG measures, non-profit-oriented institutions have not generally practiced this condition since no specialized ESG measurement for non-profit-oriented institutions is available.

Method

Research Method

This research builds an instrument for measuring the performance of zakat institutions based on the dimensions of ESG. This research employs both qualitative and quantitative methods. First, this qualitative study uses the Delphi - Analytic Network Process (DANP) technique. Second, this work employs a quantitative approach using the Multistage Weighted Index (MWI) to perform empirical investigations on instruments constructed with zakat institution objects.

Delphi collects and filters data using a survey technique comprised of two or more iterative procedures, with a sequence of processes and analyses supported by feedback (Hsu & Sandford, 2007). This strategy allows respondents to express their thoughts and initial perceptions of the development of performance metrics. The Delphi method's primary feature is the feedback process from respondents, which may be regulated through a problem-solving approach to exclude inaccurate data from the model (Zams et al., 2020). Delphi creates a more organized and methodical framework (Peng & Liao, 2022).

Meanwhile, ANP is a multi-criteria decision-making method that can produce a comprehensive analytical framework for solving problems in decision-making for the community, government, and companies (Ascaria, 2005; Saaty & Vargas, 2006). There are several advantages to using the ANP method (Saaty &

Vargas, 2006). ANP can help build a holistic and non-partial analysis in which all factors and criteria are considered hierarchically in the model framework and with the interrelationships between factors and criteria. Applying the DANP method results in more accurate decision-making due to an iterative process (feedback) to reach expert agreement.

Delphi-ANP research was carried out through four stages (Figure 2). The first stage consists of a literature review, Focus Group Discussion (FGD), and in-depth interviews with representatives of practitioners, associations, academics, and regulators, which will be used for a survey using the Delphi method by forming a semi-structured Delphi questionnaire and structured Delphi questionnaire that is distributed repeatedly to collect and capture the most appropriate performance instrument.

The second stage is to form the construction of the ANP model. The structure of the ANP model developed will be submitted to experts for validation. The third stage is the preparation of relevant questionnaires and pairwise comparisons. Questionnaires received feedback from respondents will be calculated by geometric means and rater agreement through Super Decisions and Microsoft Excel software. Rater agreement is a measure that shows the level of conformity of respondents (R1-Rn) to a problem in one cluster, measured using Kendall's coefficient of concordance (W; $0 < W < 1$). Rater agreement shows the level of agreement and understanding of all respondents on a particular issue. The geometric mean is the average value that shows a certain tendency and represents the average rating of respondents (Ascarya, 2005). The fourth or final stage is the result validation and interpretation of the questionnaire that has been analyzed. The stages of the Delphi-ANP research are presented in Figure 3. Mathematically, geometric values mean, and the following formula calculates rater agreement:

$$W = S/MaxS \dots\dots\dots (1)$$

$$S = (T_1 - U)^2 + (T_2 - U)^2 + \dots + (T_p - U)^2 \dots\dots\dots (1.1)$$

$$MaxS = (n - U)^2 + (2n - U)^2 + \dots + (pn - U)^2 \dots\dots\dots (1.2)$$

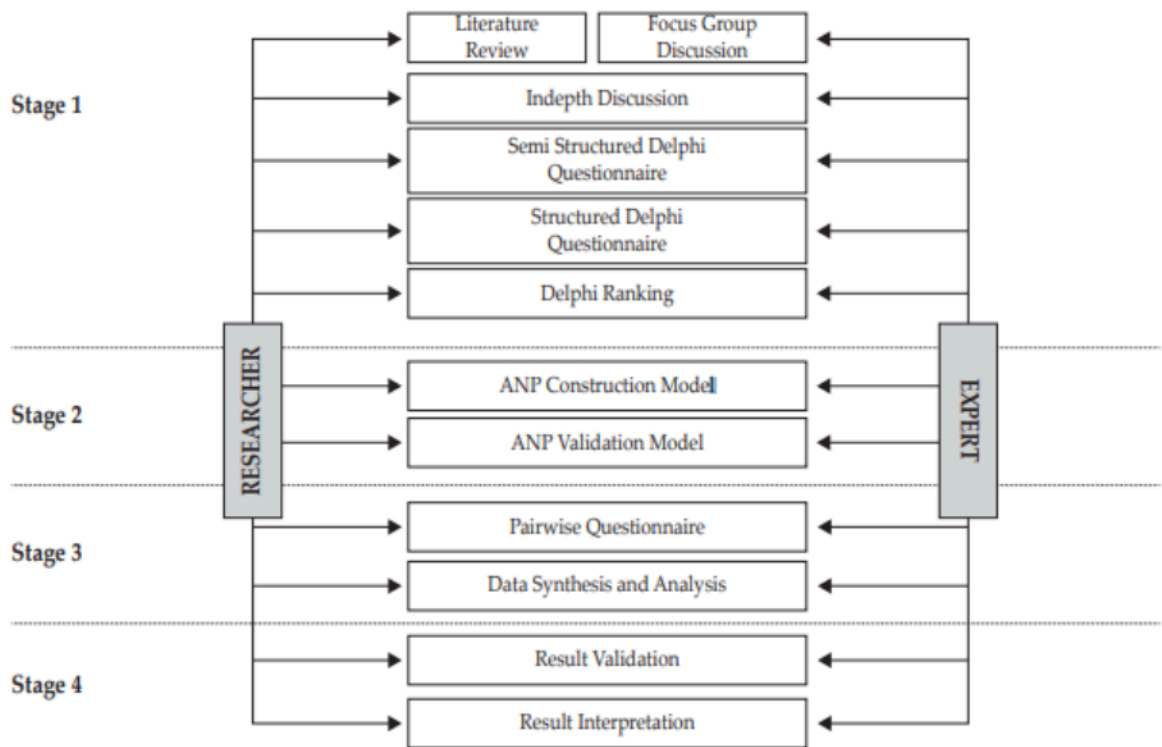
U is the average value of the total ranking, S is the number of squared deviations, p is the number of nodes, and n is the number of respondents.

$$GM = (R_1 * R_2 * R_3 * \dots * R_n)^{\frac{1}{n}} \dots\dots\dots (2)$$

GM is the geometric mean, R is the respondents, and n is the number of respondents.

For data analysis to be practical, respondents must have the appropriate background, competence, and experience in the research topic (Ascarya, 2005). Respondents representing the academics must have expertise and knowledge of ISF governance. For practitioners, respondents must come from Islamic philanthropic institutions. For regulators, respondents must occupy essential positions and have the authority to determine policies in the ISF sector. Therefore, this study selected respondents using a purposive sampling method with specific criteria. The experts were accompanied by researchers when filling out the questionnaire to avoid biased. This act ensures that all respondents have the same understanding in answering the questionnaire, which will help maintain consistency of responses. In ANP analysis, the validity of the results depends more on skill than the number of respondents.

The questionnaire in this study uses two different scales. First, a scale of 1-5 for the questionnaire with Delphi aims to ensure consistency and agreement from experts regarding the formulated instrument. Scale 1 means disagree, while scale 5 means strongly agree. Second, a scale of 1-9 is used when entering the pairwise questionnaire comparison to see the priority of the entire instrument built. Scale 1 means not priority/relevant/influential, while scale 9 means high priority/relevant/influential.



Figures 1. DANP Research Stages

Source: (Zams et al., 2020)

After completing the DANP method, the researchers conducted an empirical study using the MWI method. MWI is a method developed by the Center for Strategic Studies (*PUSKAS*) BAZNAS to build an index. In the MWI method, the researcher builds 1-5 indicator points from the DANP instrument/index. This scale provides comprehensive measurements and explanations related to the built index. The preparation of indicator points is carried out through in-depth interviews with experts and reviewing previous literature. The calculation of the index value of the institution under study can be shown mathematically by the following formula:

$$I = (\sum MWI IND * NVA) \dots\dots\dots (3)$$

$$MWI IND = \frac{MWI}{5} * NVI \dots\dots\dots (3.1)$$

MWI IND is the average score of each institution on the indicators built, obtained from the index value per indicator measured on a scale of 1-5 multiplied by the normalized DANP value per indicator and divided by 5. In comparison, NVA is a normalized value per aspect of DANP.

Data and Research Samples

This study compiles a research questionnaire on the DANP technique and a questionnaire on the MWI using primary data from focus group discussions, in-depth interviews, and a literature review. Based on the results of the FGD, in-depth interviews, and literature review, this research builds the ANP framework shown in Figure 1.

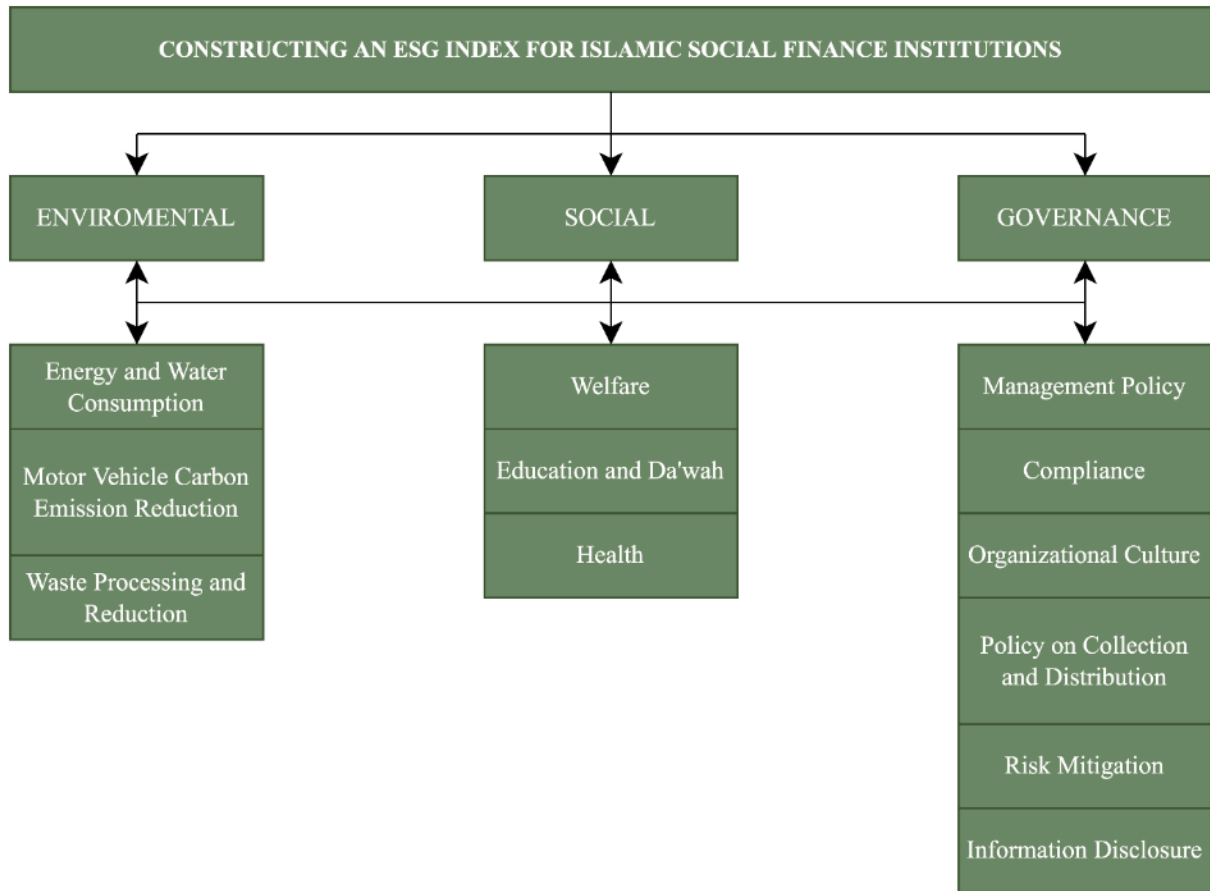


Figure 1. Research Framework of Constructing an ESG Index for Islamic Finance Institutions

Source: Authors (2023)

This study concludes that there are 3 aspects in environmental and social aspects, as well as six aspects in governance aspects in building the ESG Index for Islamic Social Finance Institutions. Pembangunan kerangka tersebut lebih detail ditunjukkan oleh Table 1.

Table 1. ESG Index Framework Development

Dimension	Aspect	References
Environmental	Energy and Water Consumption	Focus Group Discussion, Indepth Interview, (NASDAQ, 2019; OECD, 2006; Sanofi, 2021; United Nation, 2004; World Bank, 2020, 2021)
	Motor Vehicle Carbon Emission Reduction	
	Waste Processing and Reduction	
Social	Welfare	Focus Group Discussion, Indepth Interview, (Kabir Hassan et al., 2021; NASDAQ, 2019; Otoritas Jasa Keuangan, 2017; Undang-Undang Republik Indonesia Nomor 13 Tahun 2003 Tentang Ketenagakerjaan, 2003; World Bank, 2020)
	Education and Da'wah	
	Health	
Governance	Management Policy	Focus Group Discussion, Indepth Interview, (DVFA, 1999, 2009; Otoritas Jasa Keuangan, 2017, 2019, BAZNAS, 2016; Undang-Undang
	Compliance	
	Organizational Culture	

Policy on Collection and Distribution	Republik Indonesia Nomor 23 Tahun 2011 Tentang Pengelolaan Zakat, 2011)
Risk Mitigation	
Information Disclosure	

Source: Authors (2023)

Regarding data availability owing to preliminary data, the data may be obtained by contacting the researcher. Filling out the questionnaire was done in three ways: individually, online through Zoom conference, and offline. To minimize mistakes in self-completion, the researcher included comments and a glossary on the questionnaire for questions that required explanations. Meanwhile, two research teams accompanied the online and offline filling.

The responders for the Delphi and ANP surveys were the same person. They were 11 in all, including two from the academic group, two from the practitioner group, three from the association group, and four from the regulator group. The DANP technique does not prioritize the number of respondents over the respondents' competence (Ascarya, 2005). The rationale for selecting respondents using a purposive sample strategy are as follows: (a) have areas of expertise in Islamic economics; zakat economics and management; zakat and ESG; and have more than three international publications for academic groups; (b) are leaders or hold managerial positions in zakat institutions for groups of practitioners; (c) is a leader or holds a managerial position in an association, both an association in the field of Islamic economics and a zakat association for group associations; and (d) holds a managerial position in an association, both an association in the field.

Respondents in the MWI approach include five zakat institutions that meet the following criteria: (a) is a zakat institution that focuses on the environment, society, and government, as indicated by the presence of associated programs; and (b) is a zakat institution that operates on a national, provincial, district, and representative office/branches scale.

Result and Discussion

This research builds a performance measurement index for ISF institutions based on the ESG dimensions. This study also conducted an empirical test of the implementation of the index on five ISF institutions to analyze the performance of institutions based on the ESG dimension.

ESG Index

The governance dimension is critical when reviewing the performance of ISF Institutions, followed by the environmental and social aspects, which have the same priority (Table 2). However, experts highlight the Aspect of Waste Processing Reduction for the environmental dimension and the Aspect of Health for the social dimension.

This study examines the performance of five ISF institutions using the newly developed ESG index (Table 3). Each ISF Institution has unique performance outcomes that are worth investigating. The table below describes the ISF institutions to offer an overview of each institution's vision and features.

According to Table 4, Institution A has the most excellent ESG performance, followed by Institutions C, D, and B. This study yielded some interesting results. First, all ISF institutions receive more weight for the governance dimension. The ISF institution is still working to improve the management of Islamic social funds. Second, three ISF institutions (B, C, and D) have higher environmental performance than the social dimension, in contrast to the social funding institution (E), which focuses more on the social dimension. Meanwhile, one ISF institution (A) focuses equally on the environmental and social dimensions.

Table 2. Index of Performance Measurement of Zakat Institutions Based on ESG Dimensions

	Clusters and nodes	AK A	WAK A	PRA C	WPRA C	AS C	WAS C	RG L	WRG L	AL L	Ran k
DIMENSIONS	1. ENVIRONMENTAL	0.018	0.25	0.018	1	0.018	1	0.018	0.81	0.018	2
	2. SOCIAL	0.018	1	0.018	1	0.018	1	0.018	1	0.018	2
	3. GOVERNANCE	0.022	1	0.022	0.91	0.022	0.9	0.022	0.72	0.022	1
ENVIRONMENTAL	1.1 Energy and Water Consumption Aspects	0.025	0.75	0.025	1	0.025	1	0.035	0.81	0.023	3
	1.2 Aspects of Motor Vehicle Carbon Emission Reduction	0.025	1	0.025	0	0.025	0.11	0.019	0.2	0.025	2
	1.3 Aspects of Waste Processing and Reduction	0.025	0.95	0.025	0.85	0.025	0.51	0.019	0.35	0.026	1
SOCIAL	2.1 Welfare	0.025	0.85	0.025	0.95	0.025	0.44	0.019	0.59	0.023	3
	2.2 Education and Da'wah	0.025	0.7	0.025	0.8	0.025	0.29	0.027	0.36	0.025	2
	2.3 Health	0.025	0.9	0.025	0.75	0.025	0.69	0.027	0.46	0.026	1
GOVERNANCE	3.1 Management Policy	0.014	0.54	0.012	0.54	0.012	0.92	0.010	0.35	0.014	5
	3.2 Compliance	0.019	0.9	0.017	1	0.017	0.56	0.018	0.55	0.016	4
	3.3 Organizational Culture	0.014	0.5	0.012	0.3	0.012	0.89	0.016	0.27	0.014	5
	3.4 Policy on Collection and Distribution	0.014	0.9	0.017	1	0.017	0.6	0.016	0.63	0.014	5
	3.5 Risk Mitigation	0.014	0.35	0.012	0.8	0.012	0.73	0.010	0.28	0.014	5
	3.6 Information Disclosure	0.014	0.47	0.017	0.8	0.017	0.6	0.018	0.84	0.014	5

AKA = Geomean Academics Group

W AKA = Kendall's coefficient of Academics Group Concordance

PRAC = Geomean Group of Practitioners

WPRAC = Kendall's coefficient of Concordance Group of Practitioners

ASC = Geomean Group Association

WASC = Kendall's coefficient of Association Group Concordance

RGL = Regulatory Group Geomean

WRGL = Kendall's coefficient of Regulatory Group Concordance

ALL = Geomean of All Respondents

Table 3. Characteristics Of ISF Institutions That Are Used as Research Samples

Institutions	Type of ISF	Institution Scale and Status	Vision	Type of Distribution Program
A	Zakat, <i>Infaq</i> , Alms, and <i>Waqf</i>	Headquarters National scale institution	Become a trusted institution in building the independence of orphans and people experiencing poverty.	Consumptive and distributive.
B	Zakat, <i>Infaq</i> , Alms, and <i>Waqf</i>	Representative office (province) National scale institution	Become a global Islamic philanthropic institution that is professional and trusted in managing ISF to realize community empowerment and people's welfare.	Consumptive and distributive.
C	Zakat, <i>Infaq</i> , Alms, and <i>Waqf</i>	Branch office National scale institution		Consumptive and distributive.
D	Zakat, <i>Infaq</i> , Alms, and <i>Waqf</i>	Branch Office (Province) National scale institution	The realization of a just and prosperous society.	Consumptive and distributive.

E	Zakat, <i>Infaq</i> , Alms, and <i>Waqf</i>	Headquarters National scale institution	Serving God by building <i>ummah</i> .	Consumptive and distributive.
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Source: Authors Compilation

Table 4. Performance of ISF Institutions Based on the Index of Support for Zakat Institutions Based on the ESG Dimension

Dimensions	Institutional Performance Index Per Dimension				
	A	B	C	D	E
Environmental	0.276	0.185	0.291	0.252	0.188
Social	0.276	0.164	0.248	0.243	0.269
Governance	0.358	0.251	0.353	0.360	0.357
Final Score of Amil Zakat Institution Performance Index Based on ESG Dimensions	0.911	0.600	0.891	0.855	0.815
Overall Rank	1	5	2	3	4
Environment Dimension Rank	2	5	1	3	4
Social Dimension Rank	1	5	3	4	2
Governance Dimension Rank	2	5	4	1	3

Environmental dimensions in this study include 1) energy and water consumption, 2) reduction of motor vehicle carbon emissions, and 3) waste processing and reduction. At the same time, the social dimension includes 1) welfare, 2) education and *da'wah*, and 3) health. Aspects in the social dimension can be referred to as the core of ISF management because these three aspects are three areas of the ISF distribution. The discovery that Institutions B, C, and D pay significant attention to the environment rather than the social dimension is intriguing, implying that ISF Institutions focus on governance and community welfare and support global activities by paying attention to the environment.

ANP Analysis of Governance Dimensions

The experts agree that the governance dimension precedes the environmental and social dimensions. Jitmaneroj (2023) and Bhattacharya & Bhattacharya (2023) discovered that governance is the most crucial factor in CSR. Governance is critical for every organization, including LAZ, since the more substantial the governance, the greater the beneficial influence on LAZ. First, good governance allows LAZ improve its efficiency and administration, which helps LAZ to accomplish socioeconomic justice goals through wealth distribution among *mustabiq* (Kamaruddin & Hanefah, 2021; Wahab & Rahman, 2011). According to

(Adiwijaya & Suprianto, 2020), LAZ's capacity to distribute zakat funds effectively will encourage *mustabiq* to raise zakat donations, which will subsequently be donated to *mustabiq* in need.

Second, good governance improves the institution's reputation. LAZ is regarded as a responsible, transparent, and fair entity (Wahab & Rahman, 2011), which can boost public trust (Dalila, 2019). Accountability, transparency, and fairness are part of Zakat Core Principles (ZCP) (Core Principles for Effective Zakat Supervision, 2016). Because of solid governance, 92.7% of respondents in 2022 said they were consistently satisfied with BAZNAS' performance. Furthermore, 98.4% of respondents trusted the information supplied by BAZNAS (*Puskas BAZNAS* Publication, 2023).

Third, excellent governance is essential for institutional sustainability (Amir et al., 2022) and resolving institutional disputes (Wahab & Rahman, 2011). LAZ mitigates risk by conducting an internal audit of the institution (Ishak & Rahman, 2021). LAZ's risk mitigation initiatives, according to the ZCP, include 1) reputation and *muzakki* loss risk (ZCP 12); 2) disbursement risk (ZCP 13); 3) operational risk (ZCP 14); and 4) Shari'a control and internal auditing (ZCP 15).

Fourth, (Sawmar & Mohammed, 2021) discovered that institutional governance influences *muzakki*'s capacity to pay zakat. *Muzakki* gains faith in LAZ if the company's leader and board of directors are accountable, transparent, and capable of managing stakeholders successfully and making fair judgments. Ideal leadership helps to ensure zakat compliance (Amir et al., 2022).

Fifth, it facilitates LAZ's collaboration with external parties to fulfill institutional goals (Raja Adnan et al., 2022). LAZ has limited human resources, and LAZ offers a variety of programs with varying accomplishment goals. It is not unusual for LAZ to collaborate with external parties with qualifying abilities to fulfill LAZ's aims to meet predefined targets. Often, the execution of a cooperation program is predicated on the institution's credibility being examined based on the performance of institutional governance (Tun et al., 2021). BAZNAS, in the 2023 Zakat National Coordination Meeting with the theme Strengthening Collaboration & Synergy of the Community's Religious Maslahat Program, indicated that coordination between BAZNAS, LAZ, and the Ministry of Religion must be strengthened to improve the quality of zakat management in Indonesia (Media Indonesia, 2023)

Sixth, avoid impeding LAZ's growth and development. According to (Saad & Farouk, 2019), the main obstacles to the poor performance of zakat institutions in Nigeria are weak zakat governance in terms of law, administration, as well as management, a lack of public acceptance of fatwas, the absence of zakat accounting standards, and low levels of institutional compliance with zakat principles. This observation is consistent with the findings of (Wahyuni-TD et al., 2021) and (Saad et al., 2017), who found that effective governance enhances LAZ performance considerably.

The D-ANP results show that compliance is the most crucial aspect of governance. This finding comprises LAZ's adherence to internal institutional standards, Sharia rules, favorable laws that govern zakat management operations, and remedial actions for deviant behavior. This aspect's construction consists of four indicators, namely:

- The institution has a Sharia Supervisory Board.
- According to Sharia law and legal legislation, the institution has excellent integrity in zakat management.
- The institution follows a zakat management ethics code.
- The institution takes corrective action for improper Zakat management behaviour.

The study's findings highlight the significance of LAZ's adherence to Islamic law under the first principle of *maqashid* sharia, namely the protection of religion (*bifalḥ ad-din*). One of the requirements for receiving

zakat worship is adherence to Sharia rules. Assume that the handling of zakat resources is not following Islamic guidelines. In that situation, a severe breach will occur, resulting in sin for the zakat manager and a reduction in the *muzakki*'s worship activities.

D-ANP Analysis of Environmental Dimensions

In Indonesia, there has never been an ESG index for LAZ. However, given the rising necessity of caring for the environment, applying ESG principles has begun in Indonesia, particularly with assistance from international organizations, the government, and society. For example, the Financial Services Authority (OJK) has obliged financial institutions, issuers, and public corporations to provide a Sustainability Report that includes economic, social, and environmental sustainability aspects. According to OJK Regulation Number 51/POJK.03/2017, Environmental Aspect Performance must comprise at least: 1) energy consumption (including power and water); 2) emission reductions; 3) waste and effluent reduction; and 4) biodiversity protection. When comparing the author's index to the OJK overview, it appears that the construction of the environmental dimension for LAZ is more straightforward because it only includes three aspects: 1) energy and water consumption, 2) reduction of motor vehicle emissions, and 3) waste treatment and reduction.

The data processing findings utilizing the DANP approach demonstrate that waste processing and reduction is the priority aspect of LAZ's environmental dimension. Garbage is a source of environmental deterioration and a threat to human life since increased garbage production has negative consequences in air pollution, water pollution, and soil contamination (Maitre-Ekern, 2018; Manna & Sen, 2021). Furthermore, economic activities like manufacturing, distribution, and consumption generate trash. However, institutions cannot halt economic activity to safeguard the environment. Thus, a middle path is taken to ensure environmental protection efforts (Kamargianni et al., 2022). According to the findings of this study, LAZ has the same priority between the social and environmental aspects as a mode of carrying out economic operations while causing no harm to the current environmental ecosystem.

Sustainable waste management actions have been started to minimize the massive waste production, which includes four main activities: 1) waste reduction; 2) reuse; 3) recycling; and 4) recovery. Reusing and re-absorbing paper and plastic to create new items is a credible and desirable business strategy based on Circular Economy (CE) (Ahmed et al., 2023). However, LAZ is a non-profit social institution that does not engage in production operations that use plastic as the primary, secondary, supporting, or packaging material. Furthermore, LAZ lacks a companion technology to reprocess paper that has been used. However, technology is one of the main supports in reuse, reduction, and recycling (Izzati Ramli et al., 2021), so the CE action is to reuse and re-absorb the paper they use in institutional administration activities. All LAZs utilized as study samples have a program for reusing spent paper.

The study's findings contrast Riabova (2023) and Fulks et al. (2023), who discovered that the most significant part of the environmental dimension is lowering emissions through digitization. According to the author, the disparities are related to variations in study objectives, whereas Riabova (2023) and Fulks et al. (2023) researched oil and gas businesses.

ANP Analysis Social Dimension

Based on the D-ANP statistics, it is known that the social dimension, together with the environmental dimension, is placed second. The findings of this study contradict the discovery of Zieliński & Adamska (2022), who discovered that trade union officials are more concerned with the social dimension of ESG than the other two. Health is the most crucial part of the social dimension. According to the researcher, the health element was picked as a priority for the social aspect since Indonesia has been dealing with COVID-19 instances for the previous three years. The number of verified COVID-19 patients in Indonesia reached 6,680,203 persons until the first week of December. The Human Development Index (HDI) statistics reveal that Indonesia ranks 107th out of 189 nations, with a Health Development Index of 70.8. Several ASEAN countries have a higher Health Development Index than Indonesia, such as Singapore (rank 1), Brunei Darussalam (rank 38), and Malaysia (rank 51).

As an ISF institution, LAZ helps reduce the danger of COVID-19 by funding impacted parties and medical assistance programs (Ascarya, 2022). Zakat has been shown to reduce the impact of this health catastrophe (Chenguel, 2023). The contribution of LAZ can strengthen the fact that zakat, as the *muzakki's* objective, has a significant role in the social and economic processes of the Muslim community, particularly under unpredictable situations such as COVID-19 (Hudaefi et al., 2022).

MWI Analysis

After conducting a priority analysis of the ESG dimensions, this study presents an empirical test of ESG implementation in zakat institutions using MWI. This study took five zakat institutions and coded them A, B, C, D, and E. Institutions A and E were the head offices of national scale institutions. At the same time, Institutions B, C, and D were provincial-scale branch offices. Of course, this scale will more or less affect the implementation of ESG in zakat management practices.

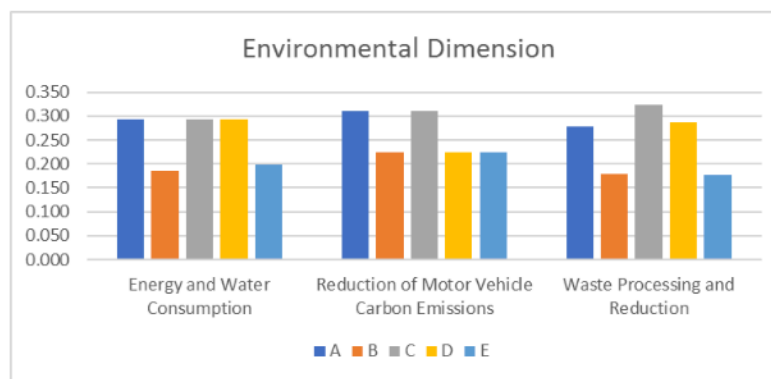


Figure 3. Performance Index per Aspect on the Environmental Dimension

Source: Author

Reviewing Table 4, Institution C has the best score on the environmental dimension compared to other sample LAZs. This condition occurs because Institution C's internal focus is actively participating in efficient water and energy consumption activities, reducing carbon emissions, and recycling waste (Figure 3). The three environmentally friendly actions implemented are one of the efforts to realize Institution C's determination to become a pioneer of LAZ with efficient and modern business processes. Concrete evidence of Institution C's contribution to the environmental dimension is obtaining the ISO 9001:2015 certificate. ISO 9001 certification is an international standard in quality management systems that governs what businesses/organizations undertake to carry out processes or activities that ensure the products/services produced fulfill the objectives. The company's product or service has been designed with environmental goals.

Institution C also offers an ESG-compliant external program that is ecologically beneficial. These activities include creating ecologically friendly soap with *Rumab Singgah* patients in Central Java. The soap is created from 100% Sles (Palm Oil Derivatives), which are safe and ecologically sustainable. Apart from making environmentally friendly soaps, Institution C also has an innovative Zero Waste program Market Day that aims to reduce the use of plastic and promote a variety of environmentally friendly products, consistent with the institution's waste reduction efforts. Even though LAZ is a social institution dedicated to enhancing the well-being of *mustabiq*, it appears from this research that LAZ contributes favorably to efforts to preserve and empower the environment.

On the social dimension, the MWI analysis reveals that Institution A has the highest score, followed by Institutions E, C, D, and B in that order (Table 4). This study finds that the social dimension encompasses welfare, education, preaching, and health. The most outstanding score in the social sector belongs to Institution A, which its financial reporting may justify. Figure 4 shows how Institution A prioritizes

allocating zakat contributions to education, *da'wah*, and the economy as the number of distributions increases yearly.

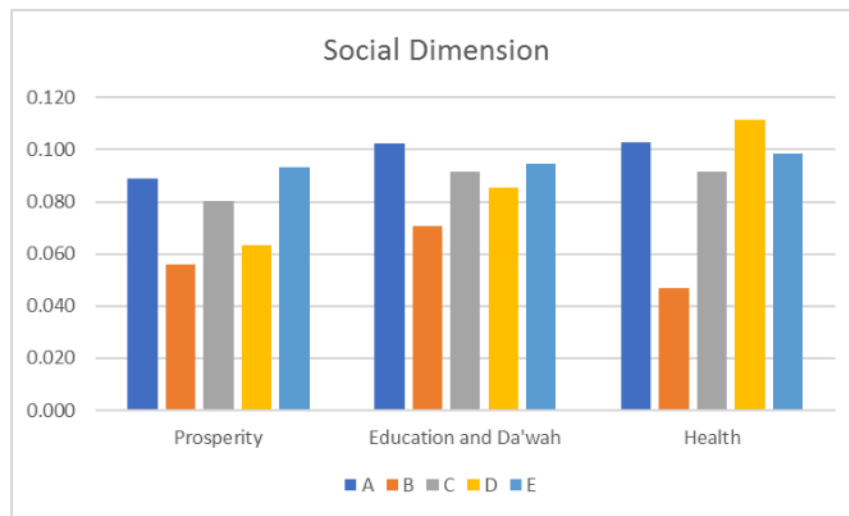


Figure 4. Performance Index for Each Aspect of the Social Dimension

Source: Author

According to the data in Table 4, the five zakat institutions have good ratings on the ESG index in the Governance dimension. This outcome indicates that the institution is still focused on establishing and optimizing governance. Good governance ensures that zakat funds are correctly and efficiently handled, equitably dispersed and optimally utilized (Adiwijaya & Suprianto, 2020). The performance of zakat institutions is connected to good governance (Wahyuni-TD et al., 2021). Furthermore, excellent governance is linked to donor adherence to zakat payment. Sawmar & Mohammed (2021) demonstrate that governance influences *muzakki's* intention and compliance to pay zakat, with higher purpose and compliance when governance is ideal. Muhammad & Saad (2016) corroborate this claim by showing that zakat governance shortcomings cause donors to be reluctant to pay their zakat. Given the low degree of donor confidence in Indonesian zakat institutions, it is unsurprising that LAZ is still focused on enhancing good governance.

According to Table 3, all five institutions have the same vision: to become professional and trustworthy organizations to benefit *mustabiq*. To achieve this vision, zakat institutions must have a robust governance foundation that includes collection-distribution management policies, *sharia* compliance, risk mitigation policies, and being open with the public in providing accurate and real-time information (Sawmar & Mohammed, 2021). Furthermore, the influence of zakat management is predicted to boost the country's economic growth on a local and macro level (Bouanani & Belhadj, 2019; Shaukat & Zhu, 2020; Widiastuti et al., 2022).

However, Institution D is the institution that has the highest governance dimension score, followed by Institution A in second position, Institution E in third position, Institution C in fourth position, and Institution B in fifth position (Table 4). Even though Institution D is a branch office, Institution D has a head office that can be judged to be performing better than other institutions on a national scale, allowing the policies and rules that exist at the head office to be transferred and implemented adequately at the branch office. Furthermore, Institution D has a long-established head office compared to Institutions A, B, C, and E. Therefore, Institution D has more comprehensive and more advanced expertise in zakat administration in the field, influencing the strength of its zakat governance. Figure 5 displays the assessment of the governance dimensions of the five institutions.

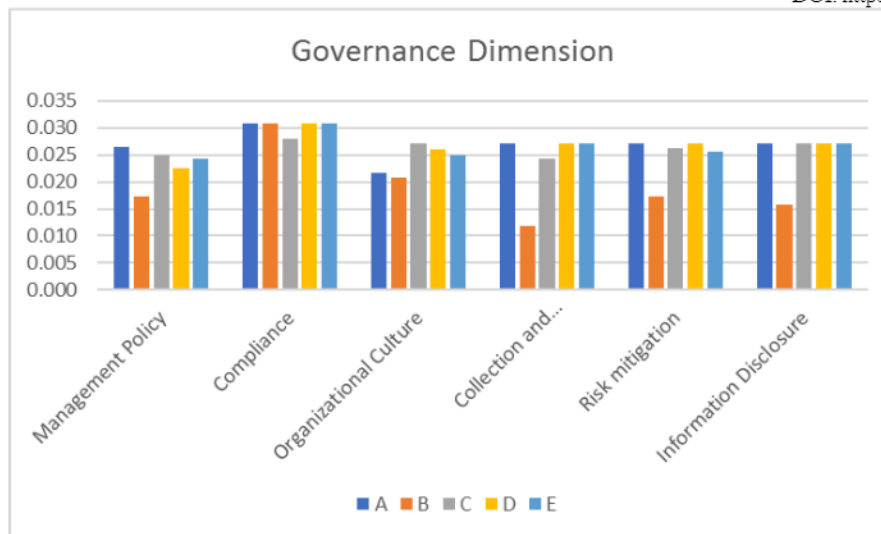


Figure 5. Per Aspect Performance Index on the Governance Dimension

Source: Author

The MWI calculation findings demonstrate that Institution A performs best across all ESG aspects, followed by Institutions C, D, E, and B (Table 4). As previously stated, Institution A is an institution that performs well on the social dimension. Furthermore, Institution A performs well on the environmental and governance dimensions, ranking second out of the five sample institutions in both categories.

Although not as good as Institution C regarding the environmental factor, Institution A's external environmental activities include the drilled well program, which aims to improve access to clean water in drought-prone areas. This program has been realized in three regions, namely: 1) Kayang Village, Pantar Barat Laut District, Alor Regency, NTT; 2) Watubonang Village, Badegan District, Ponorogo Regency, East Java; and 3) Gedoro Hamlet, Patuk District, Gunungkidul Regency, Yogyakarta. Drilling wells are not only helpful for the environment, but they also help with residential drinking water and agricultural irrigation (Gunaan et al., 2018).

Institution A also does well in the governance dimension. According to the researcher's study, excellent governance exists since Institution A is the primary pilot for the current branch offices. As a result, a precise set of rules underpins the organization's administrative and operational actions. Implementing good governance in Institution A takes the following forms: 1) transparent and efficient organizational structure; 2) standardized policies and procedures; 3) transparent and accurate financial management; 4) regular monitoring and evaluation; and 5) strong communication and engagement with related parties. As a result, effective governance will benefit Institution A since it will boost its contribution to poverty reduction, which is also Institution A's primary focus (Coccia, 2021; Jindra & Vaz, 2019).

Conclusion

This study creates an index for assessing ISF institutions' compliance with the ESG issue that is presently a source of public concern. The findings indicate that the five organizations' governance dimensions are valuable. This outcome demonstrates that the ISF institution has given close attention to optimizing governance elements. However, each institution is also regarded to benefit from its program. Therefore, the inclination for superior qualities varies from institution to institution, particularly on environmental and social dimensions.

This research indicates that ESG features may also be adopted and fulfilled by ISF institutions to increase the appropriateness of their management with sustainability aims. In practice, the measuring model created in this study may be utilized as an indication for social financing organizations undertaking assessments of

the acceptability of ESG-affected activities. Furthermore, current assessment methods may be employed as widely disseminated and implemented indicators to assess the applicability of ESG in all Indonesian ISF institutions.

In the future, ISF institutions must continue to focus on the compatibility of their operations with various sustainability challenges to maximize ISF administration while improving donor confidence. The government must continue supporting by building infrastructure and bridging collaboration between ISF institutions and other stakeholders. To support the role of ISF in conquering different social challenges, research on the creation and optimization of ISF might be conducted. This research is still confined to assessing the state of ISF institutions in Indonesia. Testing was also conducted at various ranges of institutions. The headquarters are two institutions, while the other three are provincial branch offices.

According to the researchers, this investigation is subject to numerous constraints. Initially, the application's extent is restricted. This study's ESG indicators and calculation model are specifically designed for zakat institutions, which may restrict their applicability to other categories of Islamic charitable organizations or financial institutions. The operational models of other entities may not entirely align with the unique characteristics of zakat institutions, such as their religious and social obligations. Subsequently, the quality and availability of data: Zakat institutions are restricted in their ability to implement ESG metrics due to the quality and the availability of data. The accuracy and reliability of the model may be impacted by the fact that zakat institutions may not have established systems for accumulating and reporting the detailed data necessary for comprehensive ESG assessments. Subsequently, the study may not adequately address the socio-cultural factors that could impede the widespread adoption of the proposed ESG model. After that, this paper is devoid of comparative benchmarking issues. There may be restricted opportunities for benchmarking against extant ESG practices in other sectors, as the research suggests a novel ESG calculation model that is tailored to zakat institutions. This could present challenges in assessing the relative efficacy and impact of zakat institutions using the proposed indicators. These constraints offer a fair assessment of the study's contributions, while also identifying areas that may necessitate additional research and development. Further study may be carried out by creating a model that can be adapted to cross-national settings and conducting measurement tests on ISF institutions in different countries.

Acknowledgments

The authors thank academic representatives, practitioners, associations, regulators, and all sources for their assistance in completing this research. We also grateful to the editor and four anonymous reviewers for their insightful comments and suggestions. All remaining errors are solely our own. We would also like to thank Ms. Marchlisa, Mr. Bintang Lutfi, Mr. Dzikri Nurrohman, Ms. Nisrina Nadia who helped with the data collection process.

Funding

The author expresses his deepest gratitude to *Direktoral Riset, Teknologi, dan Pengabdian Kepada Masyarakat Kementerian Pendidikan, Kebudayaan, Riset dan Teknologi* for financial support in this research.

Ethical Statement

This study complies with Research Ethics from Airlangga University listed on Airlangga Chancellor's Regulations Number 34 of 2019 concerning rules of conduct in article 16 b, where researchers must be honest, objective, and pay attention to all aspects of the research process and not manipulate research data and results, and article 16 f where researchers must respect research objects, both humans and animals, either live or die. *Direktoral Riset, Teknologi, dan Pengabdian Kepada Masyarakat Kementerian Pendidikan, Kebudayaan, Riset dan Teknologi* supervised this research thoroughly.

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Appendix 1. Process of Data Collection

Activity	When	Where	Who	Purpose	Results
Stage 1 DANP: Literature Review, Focus Group Discussion, deep Interviews and Semi-Structured questionnaire, and Delphi ranking					
FGD 1	June 25, 2022	Onlinezoom _meetings	IH, AK, BAF, CW, UB, NM, NS, SIS	Identify various aspects and indicators in measuring the performance of ISF Institutions based on the ESG dimension.	Various aspects and indicators in the ESG dimension.
Deep Interviews	July 20, 2022	Onlinezoom _meetings	SIS, BAF, NS, NM	Validation of various aspects and indicators in a semi-structured questionnaire.	Remove any irrelevant elements and indications. Include any characteristics or signs that have yet to be documented. Dimensional, aspectual, and indicator organization
Literature Reviews	June 25 – July 31, 2022	-	Research Team	Determine several factors and indicators for monitoring the performance of ISF Institutions using ESG Dimension.	Zakat institution performance measurement instrument with ESG dimension analysis.
Deep Interview – Semi-Structured Questionnaire	July 29, 2022	Online zoom _meetings	NS	Validation of various aspects and indicators in semi-structured in-depth results questionnaire	Remove any irrelevant elements and indications. Include any characteristics or signs that have

Activity	When	Where	Who	Purpose	Results
				interview July 20, 2022.	yet to be documented. Dimensional, aspectual, and indicator organization.
Deep Interview - Semi-Structured Questionnaire	July 31, 2022	Onlinezoom _meetings	SIS, N.M	Validation of various aspects and indicators in semi-structured in-depth results questionnaire interview on July 29, 2022.	The questionnaire is already structured; only improvements to the writing editor.
Questionnaire validation - Structured Questionnaire	August 3, 2022	Independent	NM	Well-structured validation questionnaire	The questionnaire has been structured and can be continued with filling out the questionnaire by experts /respondents.
Delphi Rankings	August 4-19, 2022	Onlinezoom _meetings	RS, MQF, GR, BS, MHZ, NS, BMU	Experts express their views by using a scale of agreement.	Experts express their views by using a scale of agreement.
		Offline	AK		
		Independent	KH, SHE, SPR		
	August 20-23, 2022	Rank Orders	Research team	Calculating Delphi ratings (raters agreement and p-value from the results of filling out the questionnaire)	Delphi rankings
Stage 2: ANP Construction Model					

Activity	When	Where	Who	Purpose	Results
ANP Construction Model	August 24-27, 2022	ANP Construction Model	Research team	ANP Construction Model	ANP Construction Model
Stage 3: Pairwise Comparison					
Pairwise Comparison	August 31 – September 6, 2022	Online zoom meetings			
		Offline			
		Independent			
Data Synthesis	September 6-12, 2022				
Stage 4: Results Validation and Interpretation					
Results Validation and Interpretation					

SC Team	Development Team
Muhammad Nafik Hadi Ryandono Muhammad Ubaidillah Al Mustofa	Eka Puspa Dewi Ega Rusanti Marchlisa
Tika Widiastuti	Bintang Lutfi Dzikri Nurrohman
Imron Mawardi	Nikmatul Atiya Mir'atun Nisa' Nisrina Nadia