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Developing a green accountability success index for zakat management organizations

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Abstract

Purpose – This study aims to develop the Green Accountability Success Index (GASI) as a standardized measurement instrument to assess the implementation of green accountability in Zakat Management Organizations (ZMOs). The index integrates Sharia principles with global sustainability and accountability frameworks in response to increasing demands for environmentally responsible Islamic social finance governance.

Methodology – A mixed-methods approach was employed, combining qualitative and quantitative techniques. Variables and indicators were developed through a literature review and expert validation, while index weighting and computation used the multi-stage weighted index method to ensure systematic and proportional measurement.

Findings – This study establishes a GASI framework consisting of six core variables: environmentally oriented financial accountability, sustainable governance, environmental awareness and action, mustahiq socio-economic sustainability, Sharia compliance and *maqasid al Sharia*, and technological innovation for green accountability. The index operates on a 0–1 scale and classifies performance into five levels, grouped into three implementation stages— traditional, developing, and advanced. This framework enables a comprehensive assessment of ZMO performance across zakat collection, distribution–utilization, and reporting activities.

Implications – GASI serves as a practical evaluative tool for practitioners and regulators to design, monitor, and improve sustainable zakat governance, while supporting evidence-based policies that enhance transparency, environmental responsibility, and long-term socio-ecological impact. Academically, it provides a reference framework for future research on sustainability-oriented Islamic accountability.

Originality – This study is among the first to operationalize green accountability in Islamic social finance through an integrated index-based framework, advancing both theory and practice.

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Introduction

Sustainability has become a central concern in global financial governance. Assets aligned with environmental, social, and governance (ESG) principles reached USD 35.3 trillion in 2023, accounting for approximately 40% of the total global assets under management (AUM) (Zipdo, 2025). Meanwhile, the global sustainable finance market is projected to grow rapidly, reaching USD 35.7 trillion by 2034, up from USD 5.87 trillion in 2024 (SDGNews, 2025). This growth is driven

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by escalating climate pressures, increasingly stringent ESG regulations, and advances in green technologies.

As part of its global commitment to sustainable development, Indonesia emerged as a pioneer by issuing the world's first sovereign green sukuk in March 2018, valued at USD 1.25 billion (approximately IDR 16.75 trillion) with a five-year tenor. Of these funds, 51% were allocated to refinancing green projects from 2016, while 49% supported green projects initiated in 2018 (Badan Kebijakan Fiskal, 2019). This financing covered five of the nine sectors outlined in the Green Bond and Green Sukuk Framework, including renewable energy and climate resilience (classified as dark green), as well as sustainable transportation, waste and waste-to-energy management, and sustainable agriculture (classified as medium green). This trend continued in 2019 when Indonesia issued an additional USD 750 million (approximately IDR 11.25 trillion) in green sukuk, with a similar allocation structure—51% for financing green projects from 2017 and 49% for projects in 2019 (Badan Kebijakan Fiskal, 2019).

The issuance of green sukuk in Indonesia illustrates how Islamic financial instruments are increasingly oriented toward supporting sustainability agendas. Previous studies indicate that Indonesia's green sukuk issuance represents a tangible manifestation of the government's commitment to achieving the Paris Agreement targets and reducing carbon emissions, while simultaneously creating strong market demand (Abubakar & Handayani, 2020). Furthermore, research on green sukuk highlights their potential to support sustainability initiatives while delivering investment returns consistent with Islamic values (Sumartono et al., 2024).

The alignment between ESG values and Islamic financial ethics is increasingly evident in advanced Islamic finance ecosystems, such as Indonesia and Malaysia. Studies by Ejaz et al. (2025) and Hiljannah et al. (2023) show that Islamic green financing supports environmentally protective and socially beneficial projects, including renewable energy, waste management, and sustainable infrastructure, through green sukuk, contributing to the SDGs (Manap, 2025). This development reflects a broader integration of environmental stewardship within the Islamic ethical framework and *maqasid al Sharia*—particularly the protection of wealth, life, and the environment (Edryani, 2023; Efendi, 2022; Sapingi et al., 2023; Wijayati, 2021). However, while green sukuk represents macro-level financial innovation, the philanthropic sector—particularly Zakat Management Organizations (OPZ)—holds strategic capacity to operationalize environmental outcomes at the micro-level. This shift from market-based green finance to philanthropic green finance necessitates stronger accountability mechanisms covering both financial transparency and environmental impact disclosure (Astuti & Bidabad, 2024; Fitriyani, 2023).

Although green sukuk aligns Islamic finance with the SDGs, Zakat, Infaq, and Sadaqah (ZIS) governance faces distinct risks, including green-washing when environmental claims lack standardized metrics, verification, and transparent reporting. Global non-profit experience highlights vulnerabilities, such as overstated environmental benefits and weak impact measurement. These risks underscore the need for a standardized, auditable index that integrates environmental performance with financial transparency in OPZ. Green accountability —defined as integrated environmental, social, and financial reporting aligned with *maqasid al Sharia*—offers a structured response to such risks and strengthens coherence between ESG-oriented and sharia-compliant governance (Sinaga, 2023; Syahputri & Soemitra, 2022). In this context, global green accountability translates into verifiable, comparable ZIS reporting that reduces information asymmetry and enhances stakeholder trust (Kapijan et al., 2024; Utami & Anwar, 2020).

Normatively, Islamic accounting positions justice, social welfare, and environmental care as intrinsic objectives, making green accountability central to Islamic governance (Baydoun & Willett, 2000; Ibrahim et al., 2004; Triyuwono, 2006). Sharia Enterprise Theory (SET) further conceptualizes resources as amanah from Allah, requiring stewardship by the OPZ toward donors (*muzakki*) and beneficiaries (*mustahiq*) (Astuti & Bidabad, 2024; Efendi, 2022; Hasibuan, 2016; Rini, 2016; Sunarsih et al., 2025; Syahputri & Soemitra, 2022). Although the adoption of PSAK 109 and digital reporting have improved transparency, empirical evidence shows heterogeneous implementation across OPZ, reinforcing the need for a comprehensive, standardized index to measure financial integrity, environmental stewardship, and social impact within the SET and

maqāṣid frameworks (Apriliani et al., 2024; Kapijan et al., 2024; Safrirullah et al., 2024; Utami & Anwar, 2020).

Accordingly, a green accountability index for OPZ should integrate four interrelated dimensions: financial accountability (PSAK 109 compliance and environmental disclosures), environmental accountability (resource use and ecological outcomes), social accountability (empowerment and mustahiq welfare), and governance quality (transparency, independence, and stakeholder engagement). Such an index operationalizes *maqāṣid-al-sharīʿah* objectives in the philanthropic context and enables cross-country comparisons and policy development (Efendi, 2022; Syahputri & Soemitra, 2022; Sinaga, 2023).

The convergence of Islamic green finance and ZIS governance creates a timely opportunity to institutionalize green accountability within OPZ. The linkage between green sukuk and green zakat, grounded in *maqasid al Sharia* and SET, requires standardized, auditable reporting of environmental and social impacts alongside financial stewardship. Therefore, the development of a structured index, such as the Green Accountability and Social Impact Index (GASI), becomes a strategic scholarly and policy imperative to mitigate green-washing risks and strengthen sustainable development contributions within Islamic philanthropy (Efendi, 2022; Edryani, 2023; Wijayati, 2021; Fitriyani, 2023; Kapijan et al., 2024).

This concept is inherently linked to social disclosure, which Islamic institutions are obliged to provide as a form of accountability, both spiritually to Allah (*ḥablun min Allāh*) through environmental stewardship and socially to stakeholders (*ḥablun min al-nās*) (Triyuwono, 2006). Maali et al. (2006) developed a social disclosure model for Islamic financial institutions (specifically Islamic banks) to assess their awareness and implementation of social accountability through an exploratory study. However, most existing research has concentrated on the banking sector. In contrast, Zakat Institutions (*Lembaga Amil Zakat*/LAZ) or OPZ represent equally important Islamic social financial entities that require oversight in both fund collection from *muzakki* and distribution to *mustaḥiq*, including within the dimension of green accountability.

Beyond fundraising and distribution, OPZ, grounded in the Qur'an and Hadith, are also obligated to disclose sharia compliance, sound institutional governance, and environmental responsibility (Arifah & Muhammad, 2021; Tumanggor & Sujatna, 2023). This obligation aligns with Sharia Enterprise Theory, which emphasizes justice not only among human beings but also toward the natural environment (Triyuwono, 2006). Consequently, transparency, social accountability, and environmental disclosure are critical aspects that OPZ must not overlook. In practice, however, sustainability reporting by OPZ remains limited and lacks standardized guidelines.

OPZ holds a strategic position in supporting the SDGs, particularly goals related to poverty eradication, climate action, and responsible consumption and production (Muharromah & Mustofa, 2021). With extensive networks of *muzakki* and *mustaḥiq*, OPZ can function as agents of social transformation grounded in environmental principles. However, sustainability efforts within OPZ often remain sporadic—such as environmental campaigns or energy efficiency initiatives—without standardized measurement frameworks. The absence of clear measurement tools risks rendering these initiatives symbolic rather than impactful. Although studies on OPZ accountability are increasing, most focus on financial transparency and sharia compliance (Nasution et al., 2024; Saad et al., 2017). Research on green accountability in the zakat context remains scarce, and no standardized measurement index currently exists to empirically assess the success of environmental accountability implementation within zakat institutions (Greenham, 2010).

Furthermore, existing studies reveal challenges in managing green sukuk and environmental waqf due to limited standardization and impact reporting (Baehaqi et al., 2025; Hadi et al., 2024). The absence of a valid and reliable measurement index as part of a standardized framework for OPZ presents a valuable research opportunity. Notably, Indonesia's National Zakat Agency (BAZNAS) has previously developed parameters and indicators forming an index-based framework to measure institutional zakat management. This initiative sets an important precedent, demonstrating that index development can assist zakat stakeholders in conducting data-driven evaluations of institutional performance and governance.

Prior research indicates that zakat accountability can no longer be confined to financial aspects alone; it must be expanded to include sharia compliance, governance, and environmental sustainability. Azmi et al. (2019) emphasize that sharia compliance, sharia governance, and environmental accounting are essential instruments for strengthening zakat accountability in Indonesia. Similarly, Anggraini and Sisdianto (2024) find that implementing Islamic environmental accounting in zakat, infaq, and sadaqah management enhances transparency while embedding sustainability as an integral component of Islamic social fund governance. From a responsibility accounting perspective, Kustiwi and Sawarjuwono (2021) highlight the importance of responsibility accounting within zakat organizations to assess fund management effectiveness based on responsibility centers, thereby improving transparency, accountability, and operational efficiency. Technological advancements also play a significant role; Khulataini (2025) finds that zakat digitalization enhances accountability and transparency in reporting and distribution, although strengthened sharia governance remains necessary to ensure compliance with Islamic principles. Moreover, zakat is increasingly viewed as a potential driver of sustainable development. Karimullah (2025) argues that zakat functions not only as an economic redistribution instrument but also as a mechanism for environmental conservation, positioning zakat as a comprehensive Islamic social instrument capable of addressing economic, social, and ecological challenges simultaneously.

Despite these advancements, several research gaps remain. First, while Azmi et al. (2019) and Anggraini and Sisdianto (2024) underscore the importance of Islamic environmental accounting, their studies focus primarily on practice implementation without developing standardized instruments to measure implementation success. Second, Kustiwi and Sawarjuwono (2021) emphasize responsibility accounting but do not explicitly incorporate sustainability or environmental responsibility dimensions. Third, Khulataini's (2025) study on zakat digitalization prioritizes transparency and digital reporting without integrating technology into a green accountability framework. Fourth, although Karimullah (2025) highlights zakat's potential contribution to environmental preservation, the study remains conceptual and normative, lacking concrete indicators to measure zakat's environmental sustainability impact. Consequently, despite the growing discourse on zakat accountability from sharia, governance, digitalization, and sustainability perspectives, no study to date has specifically formulated an index to measure the success of green accountability implementation in OPZ. This gap constitutes the primary research gap addressed by the present study.

This study makes several novel contributions. First, it goes beyond normative discussions of zakat accountability by developing a practical measurement index to assess the success of green accountability implementation in the OPZ. Second, it integrates the three pillars of zakat accountability stipulated in Law No. 23 of 2011—fund collection, distribution/utilization, and reporting—with environmental sustainability dimensions aligned with global standards, such as the Global Reporting Initiative (GRI) and the Sustainable Development Goals (SDGs). Third, the study provides a framework that can serve as a reference for regulators (BAZNAS), practitioners, and academics in formulating policies and strategies to strengthen zakat's role as an Islamic social finance instrument oriented not only toward social justice but also toward green development agendas. Through these contributions, this research is expected to advance the theoretical development of Islamic accounting and green accountability literature while offering a practical measurement tool applicable to evaluating and improving zakat governance in the sustainability era.

Accordingly, this study draws inspiration from BAZNAS's prior indexing initiatives to develop a similar model focused specifically on green accountability. The resulting framework aims to provide zakat stakeholders with indicators to measure and evaluate the success of green accountability implementation within OPZ. By establishing a clear measurement index, resulting policies are expected to be more targeted, data-driven, and capable of accelerating sustainable transformation in zakat management in Indonesia in an effective and efficient manner.

Based on the preceding discussion, this study is designed to pursue two primary objectives. First, it aims to identify and formulate the key variables and indicators constituting the green accountability success index (GASI) through a comprehensive literature review and in-depth

consultations with experts, academics, and practitioners. Second, the study seeks to develop a systematic and applicable weighting scheme, calculation procedure, and assessment criteria for the GASI, enabling its practical implementation within Zakat Management Organizations to evaluate and enhance the adoption of green accountability practices in zakat governance.

This study is expected to make significant academic and practical contributions. Academically, it addresses gaps in the Islamic green finance literature by introducing a green accountability concept and measurement instrument specifically designed for OPZ. It also evaluates how *maqasid al Sharia* principles can be operationalized within sustainability and accountability frameworks. The study culminates in the development of the Green Accountability Success Index (GASI)—an empirical measurement instrument that is both academically testable and institutionally relevant. Practically, the index offers strategic benefits by serving as a systematic evaluative tool for OPZ to assess and enhance green accountability implementation. Moreover, it can support data-driven decision-making for BAZNAS and policymakers in shaping green finance strategies within the zakat sector. Ultimately, this research strengthens OPZ's institutional capacity for sustainable accountability practices while reinforcing its role as a credible agent of sustainable development and a transparent reporter of social and ecological impacts.

Literature Review

Green accountability extends the conventional accountability framework by integrating environmental impact, social responsibility, and financial transparency (Azmi et al., 2019). Within Islamic accounting and Islamic social finance organizations, this concept encompasses environmentally oriented financial disclosures, governance mechanisms that promote socioeconomic sustainability, and reporting practices aligned with global standards, such as the Global Reporting Initiative (GRI), as well as Islamic social finance reporting frameworks (Edryani, 2023; Efendi, 2022; Noor et al., 2015; Wijayati, 2021). The relevance of green accountability has intensified amid the rapid expansion of sustainable finance globally, signaling a shift toward accountability models that internalize long-term socioeconomic and ecological consequences (Fitriyani, 2023; Sapingi et al., 2023).

From an Islamic perspective, green accountability is closely associated with environmental accounting as a core institutional responsibility in safeguarding Sharia principles (Ibrahim et al., 2004). Environmental disclosure, covering energy efficiency, community engagement, labor practices, and regulatory compliance, constitutes a dual form of accountability: to Allah (*ḥablun min Allāh*) and to humanity and the natural environment (*ḥablun min al-nās*) (Astuti & Bidabad, 2024; Efendi, 2022; Hasibuan, 2016). Sustainability-oriented accountability in Islamic institutions is therefore not merely a reporting mechanism but a manifestation of *ʿibādah* and *maqasid al Sharia*, particularly in protecting wealth, life, and the environment (Efendi, 2022; Astuti & Bidabad, 2024; Hasibuan, 2016). This view is consistent with Baydoun and Willett (2000)'s argument that justice, social welfare, and environmental concern are intrinsic objectives of Islamic accounting, rendering social and environmental reporting integral to Islamic accountability (Hasibuan, 2016).

The theoretical foundation of this study is grounded in Sharia Enterprise Theory (SET), which conceptualizes accountability as encompassing relationships with Allah, human beings, and the natural environment (Triyuwono, 2006). SET treats all resources as an amanah (trust) from Allah, to be managed in accordance with Sharia objectives. Accountability extends to human stakeholders—including direct stakeholders, such as donors and employees, and indirect stakeholders, namely, the broader community entitled to social welfare. Importantly, the natural environment is recognized as a critical stakeholder, mandating responsible environmental practices and transparent disclosures (Hermawan & Rini, 2016; Syahputri & Soemitra, 2022). Recent scholarship on Ecological *Maqāṣid* emphasizes that environmental stewardship is an integral dimension of *maqasid al Sharia*, providing normative justification for integrating sustainability into Islamic accounting and governance frameworks (Sunarsih et al., 2025). The integration of Green Accountability within SET therefore offers a comprehensive framework for assessing zakat (ZIS) governance, simultaneously encompassing financial integrity, social justice, Sharia compliance, and environmental sustainability.

In the context of Zakat Management Organizations (OPZ), SET offers a robust analytical lens to evaluate whether ZIS funds are managed and reported comprehensively, encompassing financial accuracy, social justice, sharia compliance, and environmental sustainability. The integration of green accountability within the SET framework produces a holistic evaluative approach aligned with global sustainability standards and Islamic ethical aspirations (Rini, 2016; Syahputri & Soemitra, 2022).

Empirical studies indicate that the implementation of PSAK 109 (ZIS accounting standards) and internet-based reporting enhances accountability and transparency, thereby strengthening the trust of muzakki and mustahiq and reinforcing public legitimacy (Fitriyani, 2023; Kapijan et al., 2024; Sinaga, 2023; Utami & Anwar, 2020). PSAK 109 plays a pivotal role in standardizing ZIS financial reporting; however, compliance levels vary across OPZ, with stronger implementation associated with improved governance quality (Edryani, 2023; Fitriyani, 2023; Safrirullah et al., 2024; Utami & Anwar, 2020). Digital and internet-based reporting further enhances accessibility and transparency for stakeholders, although adoption remains uneven and may require stronger regulatory support and policy socialization (Edryani, 2023; Fitriyani, 2023; Sinaga, 2023; Suhaidar et al., 2021; Syahputri & Soemitra, 2022).

Islamic justification for environmentally based accountability is rooted in the extension of responsibility to Allah, society, and nature, as reflected in environmental disclosure practices encompassing energy, labor, community, and regulatory aspects (Efendi, 2022; Astuti & Bidabad, 2024; Hasibuan, 2016). This aligns with maqasid al Sharia, particularly the protection of wealth, life, and environmental balance, positioning social-environmental accountability as an ethical and devotional obligation (Astuti & Bidabad, 2024; Hasibuan, 2016).

Nevertheless, several studies have highlighted implementation challenges. PSAK 109 adoption remains inconsistent across OPZ, with some institutions not fully presenting financial statements in accordance with the required components (e.g., notes to financial statements, statements of financial position, changes in funds, and cash flows), indicating the need for enhanced human resource capacity, accounting information systems, and regulatory oversight (Sinaga, 2023; Edryani, 2023; Fitriyani, 2023). Other research underscores technical and competency-related constraints, emphasizing the importance of collaboration between BAZNAS/LAZ, accounting associations, and national financial authorities to strengthen compliance (Apriliani et al., 2024; Safrirullah et al., 2024; Fitriyani, 2023; Utami & Anwar, 2020). Moreover, a potential gap persists between the normative ideals of SET and the operational realities within the OPZ. Evidence from Indonesia and Malaysia suggests that accountability practices are often shaped by regulatory environments, transparency levels, and information accessibility, resulting in varying degrees of implementation (Sapingi et al., 2023; Fitriyani, 2023).

In general, the literature affirms that green accountability provides a relevant and theoretically grounded framework for examining OPZ accountability within an Islamic paradigm supported by SET. Strengthening definitional clarity, theoretical justification, and empirical evidence regarding PSAK 109 and digital transparency practices enhances the central focus of this study. By integrating financial, social, and environmental dimensions within the Allah–human–nature accountability nexus, SET offers a comprehensive analytical foundation for evaluating zakat governance that is financially compliant, socially just, and ecologically sustainable.

Conceptual framework

Conceptually, the formulation of the Green Accountability Success Index (GASI) is grounded in a comprehensive literature review conducted by the research team. The study focuses on three core activities of zakat governance as stipulated in Law No. 23 of 2011: zakat fund collection, distribution, and utilization, and zakat management reporting. Subsequently, the level of success in implementing green accountability across these three activities is analyzed using variables derived from frameworks developed by Ibrahim et al. (2004), Triyuwono (2006), Hermawan and Rini (2016), Azmi et al. (2019), Ghoniyah & bin Mislan Cokrohadisumarto, (2022), Rahman (2015), Efendi (2022), Astuti & Bidabad (2024), Hasibuan (2016), and Sunarsih et al. (2025).

These variables function as critical success factors and include environmentally oriented financial accountability, sustainable governance, environmental awareness and action, socioeconomic sustainability of beneficiaries (*mustaḥiq*), sharia compliance and *maqasid al Sharia*, and technological innovation in support of green accountability. Each variable is further operationalized into relevant indicators based on an in-depth literature review and focus group discussions (FGDs) involving academics, practitioners, and experts.

As shown in Figure 1, the conceptual framework illustrates the process of formulating the Green Accountability Success Index (GASI) by integrating these variables into a comprehensive measurement model. The framework demonstrates how each dimension contributes to assessing the success of Green Accountability implementation within zakat management organizations (OPZ). The level of green accountability implementation success is then classified into three categories. The first is traditional, in which ZMOs largely maintain conventional practices. The second is developing, in which certain OPZ activities have begun to incorporate green accountability principles. The third is advanced, representing the highest level of maturity, where OPZs demonstrate sustained and successful green accountability implementation across the defined variables. Within this framework, the GASI serves not only as a measurement tool but also as a strategic instrument to strengthen the position of OPZs as key actors in sustainable development.

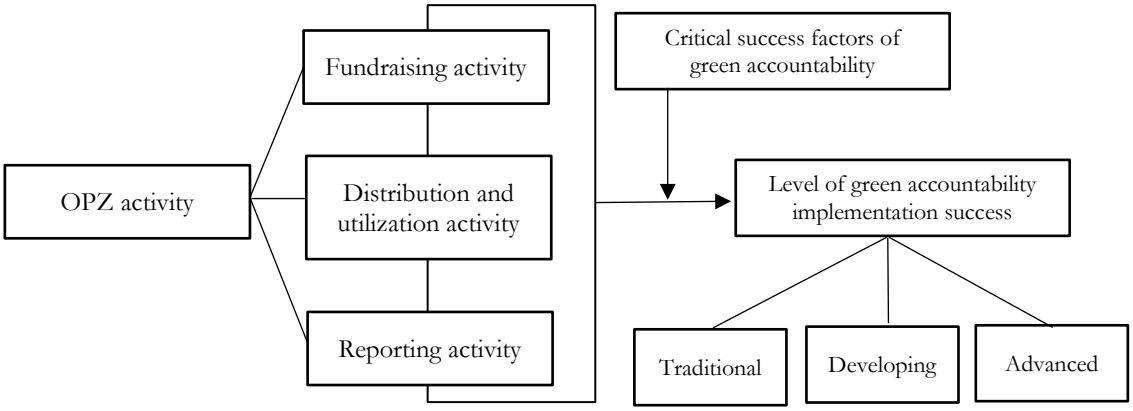

Figure 1. Conceptual framework for the formulation of the Green Accountability Success Index (GASI)
Source: Author's analysis (2026)

Research Methods

This study adopts a field research design and focuses on the formulation of a measurement index to assess the success of green accountability implementation within Zakat Management Organizations (OPZ). Data were collected directly from primary sources through observation and in-depth interviews with relevant stakeholders. The study was conducted across several OPZs, including the National Zakat Agency (BAZNAS) and Zakat Institutions (LAZ) operating at the national and sub-national (provincial and local) levels. The selection of research sites employed purposive sampling based on the following criteria:

1. OPZs that publish annual reports or sustainability reports;
2. OPZs that implement programs related to environmental initiatives and social empowerment;
3. OPZs that have adopted governance practices aligned with sharia-based accountability principles.

The development of the GASI for OPZ employs a mixed-methods approach that integrates qualitative and quantitative methodologies. The application of mixed methods in social research was initially introduced by Jick (1979) in *Mixing Qualitative and Quantitative Methods: Triangulation in Action*, which emphasizes methodological triangulation—the use of multiple research approaches—to achieve a more comprehensive understanding of complex social

phenomena. In this study, the qualitative approach is utilized to formulate the dimensions and indicators of GASI through an extensive literature review, in-depth interviews, and FGDs. Meanwhile, the quantitative approach is applied to test the validity and reliability of the proposed indicators and to calculate the relative weights of each dimension in constructing the index.

The data used to develop the GASI included both primary and secondary sources. Primary data were obtained through interviews and structured FGDs with academics, practitioners, regulators, and experts in zakat management, Islamic social finance, and green finance. These discussions aimed to explore stakeholders' perceptions, best practices, and challenges related to the implementation of green accountability within OPZs. Secondary data were employed as supporting evidence and included sustainability reports of zakat institutions, official publications from BAZNAS and national-level LAZs, relevant regulations governing zakat management and sustainable finance, and recent academic literature on Islamic social finance, green finance, ESG, and *maqasid al Sharia*.

Data analysis was conducted through several sequential stages:

1. Identification of Concepts and Dimensions. Drawing upon stakeholder theory, institutional theory, Sharia Enterprise Theory (SET), and green accountability frameworks, this study identified the key dimensions, variables, and indicators of green accountability relevant to OPZs.
2. Indicator Development. The initial indicators were derived from the literature on green finance and ESG and were subsequently adapted to the zakat context and *maqasid al Sharia* principles.
3. Indicator Validation. Validation was performed through FGDs and expert judgment, involving representatives from BAZNAS, LAZNAS, academics, zakat experts, and specialists in ESG and Islamic philanthropy.
4. Reliability and Applicability Testing. Empirical testing was conducted on selected OPZs at the national, provincial, and district/city levels. Reliability was assessed using Cronbach's alpha, and factor analysis was employed to ensure construct validity of the index.

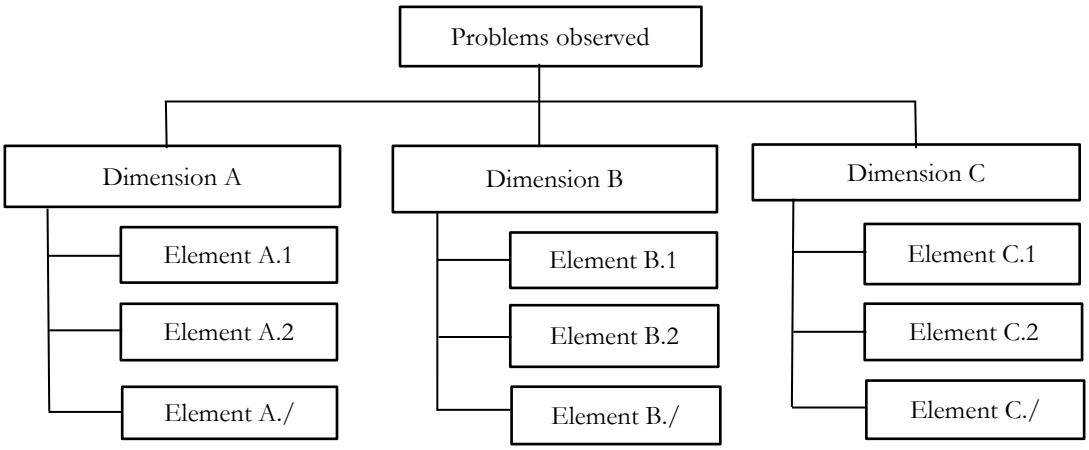

Figure 2. Sekaran indexation method
Source: Sekaran and Bougie (2019)

To formulate the dimensions, variables, and indicators of the GASI, this study adopts the indexation methodology proposed by Sekaran and Bougie (2019). As shown in Figure 2, this approach begins by observing and analyzing a specific issue, which is then grouped into general dimensions. Each dimension is subsequently operationalized into more detailed and measurable indicators, enabling a systematic evaluation in line with the research objectives.

Using this method, the study systematically identifies and maps dimensions, variables, and indicators reflecting the level of green accountability implementation within OPZs. Each observed behavior or practice is classified into a relevant dimension and further translated into specific variables and indicators.

Additionally, a quantitative approach is applied to the index calculation process. This study employs the multi-stage weighted index method developed by the Center for Strategic Studies of BAZNAS (Pusat Kajian Strategis Baznas, 2021). The method assigns weights to each dimension and variable based on assessments by experts, practitioners, and academics. The calculation proceeds hierarchically, starting from the indicator level within each variable, aggregating to the dimension level, and ultimately producing an overall index score.

Mathematically, the index calculation can be expressed as follows:

$$Index_{total} = \sum_{n}^{i} \left(\left(WD^{i} \; x \; WV_{n}^{i} \; x \; S_{n}^{i} \right) : k \right)$$

Where,

$Index_{total}$: Overall index score
WD^{i} : Weight assigned to dimension *i*
WV_{n}^{i} : Weight assigned to variable *n* within dimension *i*
S_{n}^{i} : Average Likert-scale score of indicators for variable *n* in dimension *i*
k : Number of Likert-scale points used

Subsequently, the results of the multi-stage weighted index were evaluated using a rating scale as a performance appraisal method. Figure 3 shows that this technique is essential for assessing the extent of performance achievement against predefined parameters. According to Taherdoost (2019), two primary scaling techniques are commonly applied in qualitative research: rating scales and attitude scales.

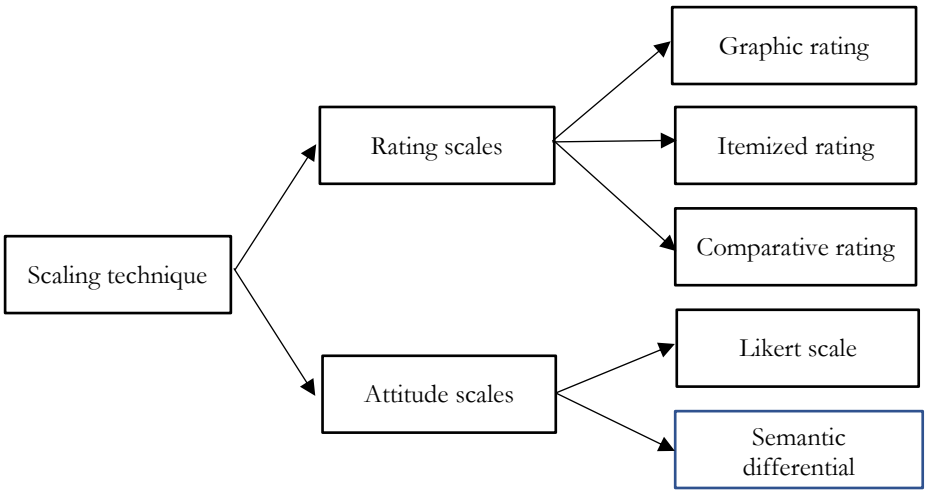

Figure 3. Scaling and ranking determination techniques
Source: Taherdoost (2019)

Both techniques were employed in the formulation of the GASI. Likert and semantic differential scales were used for attitude measurement to assess performance progression across five scale categories. A comparative rating technique was applied for the rating scale, in which research objects were ranked according to established standards.

Results and Discussion

Variables and indicators

In general, the GASI is designed to measure the level of success in implementing green accountability principles within OPZ across all zakat and other Islamic social fund (Dana Sosial Keagamaan Lainnya, DSKL) management activities. Accordingly, GASI indicators are classified into three core activities that represent the main process chain of zakat management: (1) fund collection (fundraising), (2) distribution and utilization, and (3) reporting, as illustrated in Figure 4.

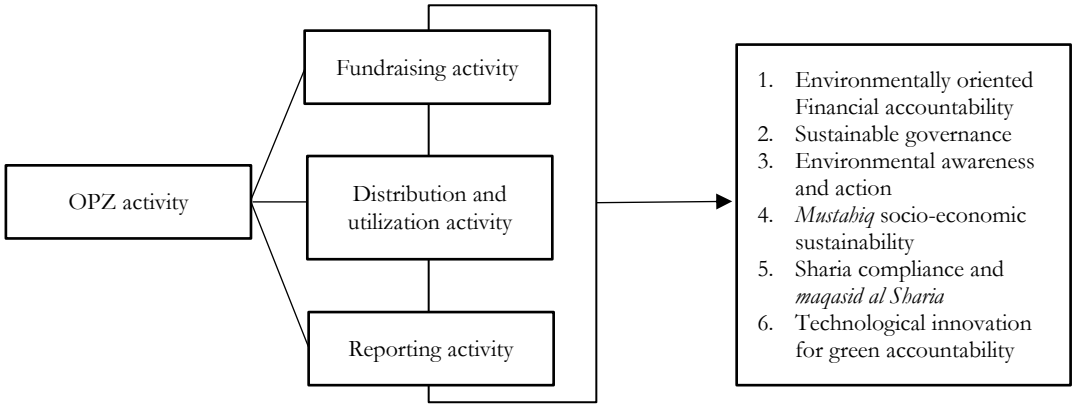

Figure 4. Activities and variables of the green accountability implementation index
Source: Author's analysis (2026)

Based on relevant theories and conceptual frameworks, this study develops the Green GASI, comprising the following key variables and indicators (see Table 1)

Table 1. Variables and indicators

No	Variable	Indicator
1	Environmentally oriented financial accountability	Transparency of Sharia and GRI-compliant financial reporting
2		Proportion of zakat funds allocated to green programs
3		Compliance with Sharia accounting and regulations
4		Environmental aspects in internal/external audits
5	Sustainable governance	Existence of sustainability policies
6		Integration of ESG principles
7		Sharia board involvement in socio-environmental assessment
8		Stakeholder participation
9	Environmental awareness and action	Green economy–based productive zakat programs
10		Environmentally friendly operational practices
11		Ecology-based programs
12		Environmental impact reporting
13	*Mustahiq* socio-economic sustainability	Contribution to poverty alleviation
14		Access to education and healthcare
15		Access to clean water and sanitation
16		Environmentally friendly MSME creation
17	Sharia compliance and *maqasid al Sharia*	Sharia audit reports
18		Sharia-based environmental programs
19		Integration of *maqasid al Sharia*
20		Eco-dakwah education
21	Technological innovation for green accountability	Digital platforms with real-time transparency
22		Socio-environmental impact dashboards
23		Adoption of green technologies
24		Collaboration with fintech and green finance

Source: Author's analysis (2026)

Each activity is measured using six key variables representing the core dimensions of green accountability: environmentally oriented financial accountability, sustainable governance, environmental awareness and action, *mustahiq* socio-economic sustainability, Sharia compliance and *maqasid al Sharia*, and technological innovation for green accountability. Furthermore, each variable is operationalized through a set of technical indicators that capture the operational, policy, governance, and socio-ecological impact aspects of OPZ activities. These indicators function not

only as compliance assessment tools but also as instruments for evaluating the effectiveness, innovation, and sustainability of OPZ performance in supporting Sharia-based sustainability and environmental protection agendas. The subsequent narratives and tables systematically elaborate all the variables and indicators constituting the GASI.

Fundrising activity

The collection of ZIS and DSKL constitutes a critical starting point in the overall zakat management process. Within the framework of the GASI, this activity represents one of the key dimensions for assessing the success of green accountability implementation in OPZ. Fund collection is not merely perceived as the mobilization of financial resources but as a process that must embody commitments to transparency, Sharia compliance, sustainable governance, and contributions to environmental sustainability.

In this study, ZIS and DSKL collection activities are evaluated using six main variables (see Figure 4). Each of these variables is further elaborated into specific technical indicators that reflect how OPZ implements green accountability principles from the earliest stage of fund mobilization. The variables and technical indicators forming the basis for assessing ZIS and DSKL fund collection activities are presented in Table 2.

Table 2. Variables and indicators of fundrising activities

No	Variable	Indicator	Description	Reference
1	Environmentally oriented financial accountability	Transparency of Sharia- and GRI-compliant financial reporting	Assesses transparency of zakat fund collection, allocation, and disclosure in line with Sharia accounting and sustainability reporting standards.	Rahman (2015); Efendi (2022); Astuti & Bidabad (2024); Hasibuan (2016)
2		Proportion of zakat funds allocated to green programs	Measures the share of total funds allocated to programs with explicit environmental objectives.	Rahman (2015); Edryani (2023); Fitriyani (2023); Utami & Anwar (2020)
3		Compliance with Sharia accounting and regulations	Evaluates compliance with national regulations, PSAK standards, DSN–MUI fatwas, and Sharia governance rules.	Efendi (2022); Astuti & Bidabad (2024); Rini (2016); Syahputri & Soemitra (2022)
4		Environmental aspects in internal/external audits	Assesses whether audits incorporate environmental criteria in fund management verification.	Edryani (2023); Fitriyani (2023); Syahputri & Soemitra (2022); Kapijan et al. (2024)
5	Sustainable governance	Existence of sustainability policies	Measures the availability of formal sustainability or green governance policies within OPZ.	Rahman (2015); Edryani (2023); Astuti & Bidabad (2024); Safrirullah et al. (2024)
6		Integration of ESG principles	Evaluates the adoption of ESG principles in zakat strategy, project selection, and reporting.	Hasibuan (2016); Sinaga (2023); Safrirullah et al. (2024); Nofita et al. (2024)
7		Sharia board involvement in socio-environmental assessment	Assesses the role of Sharia boards in evaluating social and environmental impacts beyond compliance.	Rini (2016); Syahputri & Soemitra (2022); Kapijan et al. (2024); Apriliani et al. (2024)
8		Stakeholder participation	Measures stakeholder involvement in policy formulation and evaluation processes.	Sapingi et al. (2023); Sinaga (2023); Suhaidar et al. (2021); Nofita et al. (2024)
9	Environmental awareness and action	Green economy–based productive zakat programs	Assesses zakat programs supporting green economic activities such as organic	Fahmi (2025)

No	Variable	Indicator	Description	Reference
			agriculture or energy efficiency.	
10		Environmentally friendly operational practices	Measures implementation of green office practices, paperless systems, and energy efficiency.	Edryani (2023); Fitriyani (2023); Suhaidar et al. (2021); DB & Kumar (2023)
11		Ecology-based programs	Evaluates funding for ecological initiatives such as clean water, reforestation, and sanitation.	Utami & Anwar (2020); Safrirullah et al. (2024);
12		Environmental impact reporting	Assesses regular reporting of environmental impacts generated by OPZ programs.	Sinaga (2023); Suhaidar et al. (2021); Arisandi & Frisko (2011); Fazial et al. (2025)
13	*Mustahiq* socio-economic sustainability	Contribution to poverty alleviation	Measures the impact of zakat programs on *mustahiq* welfare and income improvement.	Huda et al. (2025); Nofita et al. (2024)
14		Access to education and healthcare	Assesses zakat support for education and basic healthcare access for *mustahiq*.	Sinaga (2023); Apriliani et al. (2024)
15		Access to clean water and sanitation	Evaluates contributions to improving clean water and sanitation access.	Kapijan et al. (2024); Adanan et al., (2025); Kuntari et al., (2025); Siddiqui & Keddie, (2025)
16		Environmentally friendly MSME creation	Measures OPZ support for green MSMEs and sustainable livelihoods.	Nofita et al. (2024); Hakim & Makalalag, (2025); Ibrahim (2024); Marrone et al., (2020)
17	Sharia compliance and maqasid al Sharia	Sharia audit reports	Assesses the availability and outcomes of Sharia audits on zakat management.	Rini (2016); Syahputri & Soemitra (2022); Kapijan et al. (2024) ; Trisnawati et al., (2025)
18		Sharia-based environmental programs	Evaluates whether environmental programs are supported by fatwas or Sharia ijtihad.	Safrirullah et al. (2024); Ibrahim (2024); Sarea, (2020); Soraya et al. (2024)
19		Integration of maqasid al Sharia	Measures alignment of zakat programs with maqāṣid objectives, including environmental protection (*hifẓ al-bi'ah*).	Efendi (2022); Astuti & Bidabad (2024); Cholifiana, (2025); Sklavos et al., (2025)
20		Eco-dakwah education	Assesses environmental awareness initiatives integrated with Sharia-based education.	Elbanna, (2024)
21	Technological innovation for green accountability	Digital platforms with real-time transparency	Measures the use of digital zakat platforms providing transparent, near real-time information.	Kapijan et al. (2024); Suhaidar et al. (2021); Nuranjani, (2025)
22		Socio-environmental impact dashboards	Assesses information systems displaying social and environmental impact indicators.	Suhaidar et al. (2021); Arisandi & Frisko, (2011); Fazial et al. (2025)
23		Adoption of green technologies	Evaluates the use of energy-efficient and environmentally friendly technologies in OPZ operations.	Apriliani et al. (2024); DB & Kumar (2023); Fahmi, (2025)
24		Collaboration with fintech and green finance	Measures partnerships with fintech or green finance institutions to enhance sustainable zakat collection.	Wardiyah et al. (2025);

Source: Author's analysis (2026)

Distribution and utilization activity

The distribution and utilization of ZIS and DSKL constitute the core stage in ensuring that the funds entrusted to OPZ generate tangible benefits for *mustahiq* while producing sustainable socio-ecological impacts. Within the framework of the GASI, this stage is not merely viewed as a fund disbursement process but rather as a strategic sequence of activities that reflects the seriousness of OPZ in comprehensively implementing green accountability principles.

At this stage, the implementation of green accountability is increasingly critical, as decisions regarding fund utilization are directly linked to the quality of social interventions, environmental sustainability, and the achievement of Sharia objectives (*maqasid al Sharia*). Accordingly, GASI evaluates distribution and utilization activities through a set of variables that emphasize sustainable governance, *mustahiq* socioeconomic impacts, contributions to environmental improvement, Sharia compliance, and technological innovation that supports efficient, transparent, and low-emission fund disbursement.

Each of these variables is further operationalized into technical indicators that describe how OPZ plans, implements, monitors, and evaluates fund utilization programs. These indicators encompass aspects of distribution transparency, environmentally friendly program design, the effectiveness of *mustahiq* empowerment, the application of environmental, social, and governance (ESG) principles, the use of green technologies, and the integration of Sharia values in decision-making processes. More specifically, the variables and technical indicators underlying the assessment of ZIS and DSKL distribution and utilization activities are presented in Table 3.

Table 3. Variables and indicators of distribution and utilization activities

No	Variable	Indicator	Description	Reference
1	Environmentally oriented financial accountability	Transparency of financial reporting in accordance with Sharia and GRI standards	Assesses transparency of fund distribution and utilization reports in line with Sharia accounting and GRI principles, including environmental program disclosure.	Edryani (2023); Sapingi et al. (2023); Astuti & Bidabad (2024)
2		Proportion of zakat funds allocated to environmentally friendly programs	Measures the share of ZIS–DSKL funds allocated to environmentally sustainable programs.	Edryani (2023); Safrirullah et al. (2024); Astuti & Bidabad (2024)
3		Compliance with regulations and Sharia accounting standards	Evaluates compliance with national regulations, Sharia PSAK standards, and relevant fatwas.	Utami & Anwar (2020); Efendi (2022); Edryani (2023)
4		Internal/external audits incorporating environmental aspects	Assesses whether audits evaluate compliance, effectiveness, and environmental impacts of funded programs.	Hermawan & Rini (2016); Safrirullah et al. (2024); Utami & Anwar (2020)
5	Sustainable governance	Existence of OPZ sustainability-related policies	Measures the presence of formal sustainability policies guiding fund utilization and program prioritization.	Astuti & Bidabad (2024); Sapingi et al. (2023); Edryani (2023)
6		Integration of ESG principles into zakat strategies	Assesses the application of ESG principles in planning and implementing utilization programs.	Wardiyah et al. (2025)
7		Involvement of Sharia boards in assessing socio-environmental impacts	Evaluates Sharia board involvement in assessing Sharia compliance and socio-environmental impacts.	Edryani (2023); Wardiyah et al. (2025); Nofita et al. (2024)
8		Stakeholder participation	Measures stakeholder involvement in program planning, implementation, and evaluation.	Sinaga et al. (2023); Wardiyah et al. (2025)

No	Variable	Indicator	Description	Reference
9	Environmental awareness and action	Green economy–based productive zakat programs	Assesses the availability and quality of green economy–based *mustahiq* empowerment programs.	Nofita et al. (2024); Huda et al. (2025); Wardiyah et al. (2025)
10		Environmentally friendly operations (green office, paperless systems)	Measures the adoption of environmentally friendly operational practices and digital systems.	Astuti & Bidabad (2024); Wardiyah et al. (2025)
11		Ecology-based programs (clean water, reforestation, sanitation)	Evaluates fund allocation to ecological programs improving environmental quality.	Huda et al. (2025); Wardiyah et al. (2025); Utami & Anwar (2020)
12		OPZ environmental impact reporting	Assesses reporting of environmental impacts generated by utilization programs.	Nofita et al. (2024); Wardiyah et al. (2025); Sinaga et al. (2023)
13	*Mustahiq* socio-economic sustainability	Contribution of zakat to poverty alleviation	Measures the effectiveness of fund utilization in improving *mustahiq* welfare and economic independence.	Wardiyah et al. (2025); Astuti & Bidabad (2024)
14		Access to education and healthcare for *mustahiq*	Assesses the contribution of zakat programs to education and healthcare access.	Wardiyah et al. (2025)
15		Access to clean water and sanitation	Evaluates OPZ contributions to clean water and sanitation access.	Huda et al. (2025); Wardiyah et al. (2025); Nofita et al. (2024)
16		Creation of environmentally friendly MSMEs	Measures the development and effectiveness of sustainability-oriented MSMEs.	Wardiyah et al. (2025);
17	Sharia compliance and *maqasid al Sharia*	Sharia audit reports	Assesses the availability and quality of Sharia audit reports on fund utilization.	Edryani (2023); Safrirullah et al. (2024); Utami & Anwar (2020)
18		Environment-oriented zakat programs based on fatwas/ijtihad	Evaluates whether environmental programs are supported by fatwas or Sharia ijtihad.	Wardiyah et al. (2025); Triyuwono (2006)
19		Integration of *maqasid al Sharia*	Measures alignment of fund utilization with *maqasid al Sharia*, including environmental protection.	Ibrahim et al. (2004); Wardiyah et al. (2025)
20		Eco-dakwah education	Assesses educational and da'wah initiatives promoting Sharia-based environmental awareness.	Triyuwono (2006); Wardiyah et al. (2025)
21	Technological innovation for green accountability	Utilization of digital zakat platforms with real-time transparency	Measures the use of digital platforms enabling real-time transparency in fund distribution.	Astuti & Bidabad (2024); Wardiyah et al. (2025)
22		Information systems displaying socio-environmental impacts	Evaluates the availability of systems presenting social and environmental impact indicators.	Astuti & Bidabad (2024); Wardiyah et al., (2025)
23		Adoption of green technologies in OPZ operations	Assesses the use of environmentally friendly technologies in utilization operations.	Wardiyah et al. (2025)
24		Collaboration with fintech and green finance institutions	Measures partnerships with fintech or green finance institutions to enhance sustainability.	Wardiyah et al. (2025); Edryani (2023)

Source: Author's analysis (2026)

Reporting activity

The reporting of ZIS and DSKL constitutes the final stage in the zakat management cycle, serving to ensure the accountability, transparency, and sustainability of Zakat Management Organizations

(OPZ). Within the framework of the GASI, reporting activities are not merely considered an administrative obligation but are recognized as a strategic instrument demonstrating the extent to which OPZ can account for fund utilization in a Sharia-compliant and sustainable manner that delivers broad environmental and socioeconomic impacts for *mustahiq*.

High-quality reporting provides tangible evidence that the entire process—from fund collection to utilization—has been conducted in accordance with green accountability principles. At this stage, reporting quality, clarity of information, governance of sustainability, and the integration of technology are essential to ensure that *muzzaki*, the public, government authorities, and other stakeholders have access to complete, accurate, and timely information. In the context of GASI, the reporting of ZIS and DSKL is evaluated through six primary variables, emphasizing the integration of Sharia-compliant transparency, sustainability reporting standards, environmental stewardship, socioeconomic impacts, alignment with *maqasid al Sharia*, and technological innovation in information delivery. Each variable is further operationalized into technical indicators that assess the quality, depth, and relevance of the information presented by the OPZ to the public. More specifically, the variables and technical indicators forming the basis for evaluating ZIS and DSKL reporting activities are presented in Table 4.

Table 4. Variables and indicators of ZIS and DSKL reporting activities

No	Variable	Indicator	Description	Reference
1	Environmentally oriented financial accountability	Transparency of financial reporting in accordance with Sharia and GRI standards	Assesses transparency of financial disclosures in compliance with Sharia PSAK and GRI standards, including environmentally impactful allocations.	Edryani (2023); Safrirullah et al. (2024)
2		Proportion of zakat funds allocated to environmentally friendly programs	Measures disclosure of the proportion of funds allocated to environmentally oriented programs.	Safrirullah et al. (2024); Astuti & Bidabad (2024)
3		Compliance with regulations and Sharia accounting standards	Evaluates adherence of reporting to national regulations, Sharia PSAK, and zakat reporting guidelines.	Ridho & Ridho, (2024); Utami & Anwar (2020); Edryani (2023)
4		Internal/external audits incorporating environmental aspects	Assesses audit disclosures covering financial compliance and environmental impacts in ZIS–DSKL management.	Safrirullah et al. (2024); Sinaga (2023); Nofita et al. (2024)
5	Sustainable governance	Existence of OPZ sustainability-related policies	Measures disclosure of formal OPZ sustainability policies in reporting and operations.	Astuti & Bidabad (2024); Sinaga (2023)
6		Integration of ESG principles into zakat strategies	Assesses reporting on the integration of ESG principles in zakat program formulation and evaluation.	Wardiyah et al. (2025)
7		Involvement of Sharia boards in assessing socio-environmental impacts	Evaluates disclosure of Sharia board roles in assessing Sharia compliance and socio-environmental impacts.	Edryani (2023); Wardiyah et al. (2025); Nofita et al. (2024)
8		Stakeholder participation	Measures disclosure of stakeholder involvement in program evaluation and decision-making.	Sinaga (2023); Wardiyah et al. (2025)
9	Environmental awareness and action	Green economy–based productive zakat programs	Assesses reporting on implementation and outcomes of green economy–based empowerment programs.	Nofita et al. (2024); Huda et al. (2025); Wardiyah et al. (2025)
10		Environmentally friendly operations (green office, paperless systems)	Measures disclosure of environmentally friendly operational practices.	Astuti & Bidabad (2024); Wardiyah et al. (2025)

No	Variable	Indicator	Description	Reference
11		Ecology-based programs (clean water, reforestation, sanitation)	Evaluates transparency of reporting on ecology-oriented program outputs and outcomes.	Huda et al. (2025); Wardiyah et al. (2025); Utami & Anwar (2020)
12		OPZ environmental impact reporting	Assesses the quality of quantitative and qualitative environmental impact disclosures.	Nofita et al. (2024); Wardiyah et al. (2025); Sinaga (2023)
13	*Mustahiq* socio-economic sustainability	Contribution of zakat to poverty alleviation	Measures reporting on program contributions to poverty reduction and *mustahiq* welfare.	Wardiyah et al. (2025); Astuti & Bidabad (2024)
14		Access to education and healthcare for *mustahiq*	Assesses disclosure of improvements in *mustahiq* access to education and healthcare.	Wardiyah et al. (2025)
15		Access to clean water and sanitation	Evaluates reporting on programs enhancing access to clean water and sanitation.	Huda et al., (2025); Wardiyah et al. (2025); Nofita et al. (2024)
16		Creation of environmentally friendly MSMEs	Measures disclosure of sustainability-oriented MSME development supported by zakat.	Wardiyah et al. (2025)
17	Sharia Compliance and *maqasid al Sharia*	Sharia audit reports	Assesses disclosure of Sharia audit outcomes related to fund utilization and reporting.	Edryani (2023); Safrirullah et al. (2024); Utami & Anwar (2020)
18		Environment-oriented zakat programs based on fatwas/ijtihad	Measures reporting on Sharia foundations supporting environmental programs.	Safrirullah et al. (2024); Wardiyah et al. (2025)
19		Integration of *maqasid al Sharia*	Evaluates disclosure of *maqasid* alignment including environmental protection.	Ibrahim et al. (2004); Wardiyah et al. (2025)
20		Eco-*da'wah* and Sharia-based environmental education initiatives	Evaluates reporting on eco-*da'wah* and Sharia-based environmental education initiatives.	Triyuwono (2006); Wardiyah et al. (2025); Sinaga (2023)
21	Technological innovation for green accountability	Utilization of digital zakat platforms with real-time transparency	Measures disclosure of digital platforms enabling real-time monitoring of distribution.	Safrirullah et al. (2024); Wardiyah et al. (2025); Ridho & Ridho (2024)
22		Information systems displaying socio-environmental impacts	Evaluates reporting on digital systems presenting social and environmental impact data.	Lestari et al., (2023); Wardiyah et al. (2025)
23		Adoption of green technologies in OPZ operations	Assesses disclosure of environmentally friendly technologies and process digitalization.	Mohamad et al. (2022); Wardiyah et al. (2025)
24		Collaboration with fintech/green finance institutions	Measures reporting on collaborations with fintech or green finance institutions.	Nofita (2024); Wardiyah et al. (2025)

Source: Author's analysis (2026)

Weighting, calculation, and assessment criteria

Weighting

In the development of the green accountability index for OPZ, the weighting of dimensions and variables represents a critical stage to ensure that the indicators accurately reflect strategic priorities in Sharia-based green governance. Following a multi-stage weighted index approach, which is widely applied in contemporary governance and sustainability assessments, weighting is conducted systematically, measurably, and based on expert judgment. The weighting process is carried out in several stages: initial assessment of indicator relevance, normalization of scores by the evaluators,

and determination of final proportional weights across dimensions and variables. This multi-stage approach ensures that each component of the index receives a fair and balanced weight, reflecting its actual contribution to the green accountability framework.

Table 5. Variable weighting

No.	Activity	Weight portion (%)	Variable	Weight value
1	Fundraising	25	Environmentally oriented financial accountability	22
			Sustainable governance	20
			Environmental awareness & action	15
			Socio-economic sustainability of *mustahiq*	13
			Sharia compliance & *maqasid al Sharia*	20
			Technological innovation for green accountability	10
			Total	100
2	Distribution and utilization	35	Environmentally oriented financial accountability	18
			Sustainable governance	17
			Environmental awareness & action	22
			Socio-economic sustainability of *mustahiq*	23
			Sharia compliance & *maqasid al Sharia*	15
			Technological innovation for green accountability	15
			Total	100
3	Reporting	40	Environmentally oriented financial accountability	25
			Sustainable governance	22
			Environmental awareness & action	15
			Socio-economic sustainability of *mustahiq*	10
			Sharia compliance & *maqasid al Sharia*	15
			Technological innovation for green accountability	13
			Total	100

Source: Author's analysis (2026)

As shown in Table 5, a total weight of 25% of the overall index is assigned to the fundrising of ZIS and DSKL. The variable weights in this activity emphasize accountability and Sharia governance. Environmentally Oriented Financial Accountability receives the highest weight at 22%, followed by Sustainable Governance at 20%. These two variables are considered the pillars ensuring that fund collection is transparent, Sharia-compliant, and aligned with sustainability principles. Meanwhile, Environmental Awareness & Action and Socio-Economic Sustainability of Mustahiq are weighted at 15% and 13%, respectively, reflecting that social and environmental impacts are considered from the early stage of fund collection. Sharia Compliance and *maqasid al Sharia* is weighted at 20%, highlighting significant attention to normative Sharia aspects, followed by Technological Innovation at 10%.

In the context of green accountability implementation within ZIS and DSKL management, the weighting structure reflects not only technical measurement priorities but also institutional and theoretical governance logic. The allocation of 25% weight to the fundraising stage reflects the operational reality of Zakat Management Organizations (ZMOs) in Indonesia, where sustainable fund collection is essential for maintaining institutional continuity, program scalability, and public trust. From a governance perspective, fundraising accountability represents the initial legitimacy-building mechanism that supports stakeholder confidence, particularly among muzakki. Thus, this weighting does not merely measure financial performance but also reflects the institutional necessity of maintaining Sharia-compliant transparency and ethical fundraising governance within Islamic philanthropic ecosystems (Rahman, 2015; Efendi, 2022; Edryani, 2023).

For the distribution and utilization of ZIS and DSKL, a total weight of 35% is allocated, making it the dimension with the highest value in the implementation of green accountability. This reflects that the distribution phase is decisive for the ecological and social impacts of zakat management. The higher weighting assigned to the distribution and utilization phase (35%) reflects the core maqāṣid-oriented function of zakat institutions, where social welfare, poverty alleviation, and environmental protection are realized through program implementation. This phase represents the main impact-generating mechanism of ZIS governance, aligning with Sharia Enterprise Theory (SET), which positions accountability as encompassing Allah, society, and nature. Therefore, higher weights on socioeconomic sustainability and environmental awareness reflect the normative objectives of Islamic social finance in achieving social justice and ecological balance (Triyuwono, 2006; Syahputri & Soemitra, 2022; Sunarsih et al., 2025). The variables with the highest weights are the socioeconomic sustainability of Mustahiq (23%) and environmental awareness and action (22%), as this phase directly generates outputs and impacts. Environmentally Oriented Financial Accountability and Sustainable Governance receive weights of 18% and 17%, respectively, emphasizing the importance of governance and transparency during program implementation. Sharia Compliance & *Maqasid al Sharia* and Technological Innovation are each weighted 15%, reflecting adherence to Sharia principles and the need for digital monitoring of program effectiveness.

In the reporting of ZIS and DSKL, the highest weight is assigned at 40% of the total index. This underscores the critical role of reporting in ensuring transparency, public accountability, and the measurement of sustainability impacts. The highest weight assigned to the reporting phase (40%) reflects the growing importance of transparency and impact verification in contemporary Islamic philanthropy. Rather than being purely administrative, reporting functions as a strategic accountability instrument that reduces information asymmetry, enhances stakeholder trust, and mitigates global risks of green-washing in non-profit sustainability claims. This emphasis reflects an evolutionary rather than disruptive shift in zakat governance practices. The proposed index does not replace existing zakat reporting standards, such as PSAK 109, but rather extends them by integrating sustainability, ecological responsibility, and Sharia governance dimensions into a unified measurement framework (Utami & Anwar, 2020; Kapijan et al., 2024; Fitriyani, 2023). Environmentally Oriented Financial Accountability receives the highest weight at 25%, highlighting that financial accountability and information transparency are central to reporting. Sustainable Governance is also highly weighted at 22%, reflecting the importance of governance mechanisms in producing credible and sustainability-oriented reports. Meanwhile, Environmental Awareness & Action, Socio-Economic Sustainability of *mustahiq*, and Sharia Compliance are weighted at 15%, 10%, and 15%, respectively, indicating that reporting should capture environmental, social, and normative compliance dimensions. Technological Innovation, with a weight of 13%, demonstrates the increasingly critical role of digital technology in providing real-time transparency and data-driven reporting.

The variation in weights across activities and variables reflects differences in priority. Reporting receives the highest weight because it is considered the primary mechanism for evaluating the quality of accountability and the sustainability impact of OPZ. Distribution and utilization rank second because this phase is the core of program implementation and the main determinant of socio-ecological outcomes. Collection is assigned a lower, yet significant, weight because it forms the foundational stage that directs the quality and governance of zakat fund management. Thus, this weighting system provides a comprehensive and proportional analytical framework for assessing the successful implementation of green accountability within OPZ.

Calculation

To calculate the GASI for OPZ, this study employs a multi-stage weighted index approach. This method represents a structured, stepwise framework that systematically integrates Likert-scale scores, variable weights, and activity (dimension) weights. The calculation procedure is designed to generate a comprehensive and proportionate index value that reflects the relative contribution of each variable to achieving green accountability. The calculation process is conducted in several

stages, beginning with the processing of scores at the variable level, followed by aggregation at the activity level (i.e., collection, distribution, utilization, and reporting), and culminating in the overall GASI score. Mathematically, the stages of calculation can be described as follows:

a. Calculation of index values for each variable and activity

Each activity (fundraising, distribution–utilization, and reporting) consists of six variables, each assigned a specific weight. The value of each variable is derived from the average Likert-scale score (S), which is then multiplied by the corresponding variable weight (W_v) and activity weight (W_a). The index calculation for each activity is formulated as follows:

$$GASI_1 = \frac{(S_{1,1}.W_{v1,1}.W_{a1}) + (S_{2,1}.W_{v2,1}.W_{a1}) + \cdots + (S_{i,1}.W_{vi,1}.W_{a1})}{5}$$

$$GASI_2 = \frac{(S_{1,2}.W_{v1,2}.W_{a2}) + (S_{2,2}.W_{v2,2}.W_{a2}) + \cdots + (S_{i,2}.W_{vi,2}.W_{a2})}{5}$$

$$GASI_3 = \frac{(S_{1,3}.W_{v1,3}.W_{a3}) + (S_{2,3}.W_{v2,3}.W_{a3}) + \cdots + (S_{i,3}.W_{vi,3}.W_{a3})}{5}$$

$GASI_1$: Index value of the first activity
$S_{1,1}$: Average Likert-scale score of the first variable in the first activity
$W_{v1,1}$: Weight of the first variable in the first activity
$S_{2,1}$: Average Likert-scale score of the second variable in the first activity
$W_{v2,1}$: Weight of the second variable in the first activity
$S_{i,1}$: Average Likert-scale score of the ith variable in the first activity
$W_{vi,1}$: Weight of the ith variable in the first activity
W_{a1} : Weight of the first activity
$GASI_2$: Index value of the second activity
$S_{1,2}$: Average Likert-scale score of the first variable in the second activity
$W_{v1,2}$: Weight of the first variable in the second activity
$S_{2,2}$: Average Likert-scale score of the second variable in the second activity
$W_{v2,2}$: Weight of the second variable in the second activity
$S_{i,2}$: Average Likert-scale score of the ith variable in the second activity
$W_{vi,2}$: Weight of the ith variable in the second activity
W_{a2} : Weight of the second activity
$GASI_3$: Index value of the third activity
$S_{1,3}$: Average Likert-scale score of the first variable in the third activity
$W_{v1,3}$: Weight of the first variable in the third activity
$S_{2,3}$: Average Likert-scale score of the second variable in the third activity
$W_{v2,3}$: Weight of the second variable in the third activity
$S_{i,3}$: Average Likert-scale score of the ith variable in the third activity
$W_{vi,3}$: Weight of the ith variable in the third activity
W_{a3} : Weight of the third activity
5 : Maximum Likert-scale value

This stage produces an index value for each activity that already incorporates the relative weight of its contribution to the implementation of green accountability.

b. Calculation of the total GASI score

After obtaining the index values for each activity, all activity-level indices were summed to generate the final Green Accountability Success Index score for OPZ. The total index value was calculated using the following formula:

$$GASI_{Total} = GASI_1 + GASI_3 + GASI_3$$

where:
GASI_Total : Final Green Accountability Success Index score of OPZ
$GASI_1$: Index value of the Fundrising Activity
$GASI_2$: Index value of the Distribution–Utilization Activity
$GASI_3$: Index value of the Reporting Activity

This aggregation stage enables a comprehensive assessment of OPZ's capacity to implement green accountability across all core processes of ZIS and DSKL management. Accordingly, the resulting GASI_Total score provides an integrated representation of OPZ performance in terms of sustainable governance, Sharia compliance, transparency, socio-ecological sustainability, and the effective utilization of technological innovation.

Assessment criteria

To interpret the results of an index measurement (see Table 6), a clear assessment framework is essential to ensure that the final score can be meaningfully understood. Therefore, establishing score ranges and evaluation categories is a critical component to ensure that the GASI for OPZ is not merely numeric but also provides a substantive depiction of the level of green accountability achieved by the organization. This subsection elaborates on the assessment criteria used in the Green Accountability Index, covering index score ranges, performance categories, levels of green accountability implementation, and recommended policy actions for each category. Consequently, the evaluation results not only depict the current status of OPZ but also provide evidence-based directions for improvement and strategic enhancement.

Table 6. Index assessment categories

Score range	Category	Implementation level	Description
0 – 0.20	Poor	Traditional	At this level, OPZ has not applied Green Accountability principles in collection, distribution, or reporting activities. Practices remain fully conventional, with no integration of environmental sustainability, eco-friendly accountability, or Sharia compliance oriented toward maqāṣid.
0.21 – 0.40	Fair	Traditional	At this level, only a small portion of Green Accountability aspects has been introduced, but implementation remains sporadic and unstructured. OPZ shows initial efforts in environmental, Sharia, or governance aspects but has not integrated them into a coherent system.
0.41 – 0.60	Good	Developing	At this level, some OPZ activities have implemented Green Accountability principles. Environmental sustainability practices, eco-friendly financial accountability, and Sharia compliance have begun to be applied, although not yet uniformly across all operational processes.
0.61 – 0.80	Very Good	Developing	At this level, most OPZ operational processes consistently practice Green Accountability. Sustainability governance mechanisms, eco-friendly reporting, and maqāṣid-based Sharia oversight are well established, though opportunities remain for optimization and inter-activity harmonization.
0.81 – 1.00	Excellent	Advanced	At this level, OPZ has achieved mature, measurable, and integrated Green Accountability. All core activities—collection, distribution, utilization, and reporting—fully embody green accountability, meeting both sustainability and Sharia principles comprehensively.

Source: Author's analysis (2026)

The assessment categories in the Green Accountability Index are based on a score range from 0 to 1, where values approaching 1 indicate higher and more comprehensive implementation of green accountability, while values approaching 0 indicate minimal application of sustainability

principles, eco-friendly accountability, and maqāṣid-based Sharia compliance in the management of ZIS and DSKL. Overall, the index is classified into five categories, ranging from poor to excellent, which correspond to the levels of green accountability implementation in OPZ: traditional, developing, and advanced. Each category reflects not only the degree of implementation success but also forms the basis for differentiated policy recommendations tailored to the transformation needs of each OPZ.

- Poor (0–0.20) and fair (0.21–0.40) indicate that the OPZ is at the Traditional stage, where green accountability principles are minimal, incidental, or unintegrated. Zakat management remains conventional, with limited attention to environmental, sustainable governance, or maqāṣid-based Sharia compliance aspects. Intensive mentoring is required, including fundamental training, transformation roadmapping, and basic capacity building, to progress toward the Developing stage.
- Good (0.41–0.60) and very good (0.61–0.80) represent the developing level of green accountability. At this stage, various principles and sustainability practices are applied across parts or most of OPZ activities. However, consistency and cross-process integration still need improvement. Policy recommendations focus on institutional strengthening through technical training, governance quality enhancement, SOP harmonization, development of green accountability-supporting technologies, and facilitation of sustainability certification.
- Advanced (0.81–1.00) represents the advanced level, indicating mature, measurable, and fully integrated green accountability across all core activities—from collection to reporting. At this level, OPZ not only fully complies with sustainability and Sharia principles but also demonstrates continuous innovation. Policy recommendations include promoting OPZ as a national benchmark, center of excellence, and ensuring ongoing innovation while keeping best practices updated according to global standards in sustainability and zakat governance.

This assessment framework serves not only as an evaluation tool but also as a strategic instrument for guiding OPZ transformation in a gradual, systematic, and evidence-based manner, ensuring long-term sustainability and accountability improvements.

Conclusion

Based on the development of relevant theories and concepts, this study successfully formulated the GASI, comprising six principal variables along with operational, contextual, and relevant technical indicators suited to the characteristics of OPZ in Indonesia. These six variables are eco-friendly financial accountability, sustainable governance, environmental concern and action, socio-economic sustainability of *mustahiq*, Sharia compliance and *maqasid al Sharia*, and technological innovation for green accountability. The formulation of variables and indicators was developed through a comprehensive literature review and in-depth discussions with academics, zakat experts, and OPZ practitioners, enabling the index to comprehensively represent ecological, social, Sharia, and governance responsibilities of OPZ. Moreover, this study designed weighting, calculation, and assessment criteria based on expert judgment, considering urgency, sustainability impact, Sharia relevance, and the link of each variable to OPZ operational activities. The evaluation model employs a 0–1 scoring range classified into five assessment categories—from "Poor" to "Advanced"—mapped across three implementation levels: Traditional, Developing, and Advanced. This classification provides OPZ with a clear guide to identify their performance position and informs strategies for improvement and reinforcement toward sustainable zakat governance. In general, this study successfully formulates GASI as an index that is not only theoretically grounded and aligned with global standards but also practically applicable and contextually relevant to the operational reality of OPZ in Indonesia. The presence of GASI is expected to make a significant contribution to strengthening the national zakat ecosystem and encouraging OPZ toward more green, inclusive, transparent, and accountable management models. With a strong Sharia foundation, GASI is anticipated to ensure that the management of communal funds not only fulfills financial accountability and Sharia compliance but also contributes meaningfully to environmental sustainability and *mustahiq* welfare. Consequently, this

study represents a strategic step toward establishing a sustainable, equitable, and socially beneficial zakat ecosystem.

This study offers important theoretical, practical, and policy implications for the advancement of sustainable zakat governance. From a theoretical perspective, the development of GASI contributes to the literature on Islamic economics and social finance by introducing an accountability measurement framework that integrates Sharia principles, institutional governance, and environmental concerns in a systematic manner. It expands the traditional discourse on Islamic accountability, which has largely emphasized financial transparency and Sharia compliance, by incorporating environmental sustainability as an essential component of *maqasid al Sharia*. Practically, GASI functions as a comprehensive evaluation tool for zakat management organizations (OPZ), enabling them to conduct self-assessments of green accountability across all operational stages, including collection, distribution, empowerment, and reporting. Through measurable indicators, OPZ can identify priority areas for improvement, design gradual green transformation strategies, and enhance both operational efficiency and transparency in environmental impact. From a policy standpoint, GASI has the potential to serve as a strategic instrument for national zakat authorities, such as BAZNAS RI, KNEKS, and the Ministry of Religious Affairs, in mapping the implementation levels of green accountability across OPZ. This classification—ranging from traditional to advanced—can support the formulation of differentiated policies, including technical assistance, institutional capacity building, and sustainability-based incentives, while also laying the groundwork for Sharia-compliant sustainable zakat reporting aligned with broader development agendas.

Despite these contributions, the study has several limitations that should be acknowledged. The construction of GASI, including its variables, indicators, and weighting system, relies significantly on expert judgment, which introduces a degree of subjectivity, although efforts were made to minimize this through multidisciplinary input. In addition, the study primarily focuses on conceptual development and, therefore, large-scale empirical validation has not yet been extensively conducted. The scope is also limited to the Indonesian context, meaning that its applicability to Islamic philanthropic institutions in other countries may require careful adaptation because of differences in regulatory frameworks, institutional cultures, and governance capacities. Moreover, the study does not deeply examine the causal relationship between green accountability practices and measurable environmental or social outcomes, leaving room for further investigation. Accordingly, future research is recommended to conduct broader empirical testing of GASI across diverse OPZ contexts, develop more objective and data-driven weighting methods using advanced analytical techniques, undertake cross-country comparative studies, and explore the integration of GASI with global sustainability indices as well as its linkage to *maqasid al Sharia* and the Sustainable Development Goals (SDGs). Such efforts would strengthen zakat governance and reinforce its role as a strategic instrument in sustainable development.

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Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this manuscript, the authors used several AI-assisted tools, especially ChatGPT, for translation from Bahasa Indonesia into American English and for improving the clarity, grammar, and readability of the manuscript. The authors carefully reviewed, edited, and validated all outputs generated by these tools and take full responsibility for the accuracy, integrity, and final content of the published article.

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Appendix

Table 7. Operationalization of measurement scales for variables and indicators of fundraising activities

Variable	Weight	Indicator	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5
Environmentally friendly financial accountability	22	1	No report available	Report available but not compliant with standards	Complies with Sharia or GRI standards	Complies with Sharia and GRI but incomplete	Comprehensive, integrated, and audited report
		2	<1% allocated	1–3% allocated	4–7% allocated	8–12% allocated	>12% allocated
		3	Non-compliant	<50% regulatory compliance	50–75% compliance	Full compliance with core regulations	Very high compliance + internal Sharia policies
		4	No audit	Internal audit without environmental aspects	Internal audit includes environmental aspects	Internal & external audits include environmental aspects	Routine audits + follow-up on recommendations
Sustainable governance	20	1	No policy	Policy exists but not implemented	Partially implemented	Institutionally implemented	Periodically reviewed and updated
		2	No integration	Very limited integration	Integrated into some programs	Integrated across all core activities	ESG forms the core of OPZ strategy
		3	Not involved	Sporadic involvement	Involved in some programs	Regular involvement	Acts as key decision-maker
		4	No participation	Limited consultation	Annual consultation	Stakeholders involved in evaluation	Full, systematic multi-stakeholder engagement
Environmental awareness and action	15	1	No program	Small-scale program	Sporadic implementation	Regular and structured program	Comprehensive program with significant impact
		2	Not implemented	Basic practices	>30% paperless	>60% paperless + waste management	Fully implemented green office
		3	None	One small program	Several annual programs	Regular and structured programs	Sustainable ecological infrastructure
		4	No report	Narrative report	Partial indicator coverage	Comprehensive and measurable report	Integrated digital dashboard reporting
Mustahiq socio-economic sustainability	13	1	Not measurable	<5% reduction	5–10% reduction	11–20% reduction	>20% reduction
		2	No program	Small-scale program	Partial coverage of mustahiq	Majority of mustahiq served	Structured programs with significant outcomes
		3	None	One small program	Several basic programs	Medium-scale infrastructure	Sustainable infrastructure + monitoring
		4	None	1–2 MSMEs	3–5 MSMEs	6–10 MSMEs	>10 MSMEs with mentoring support
Sharia compliance and *maqasid al Sharia*	20	1	No audit	Internal audit	Internal audit + partial standards	Regular external audit	Comprehensive audit + follow-up actions
		2	None	Exists but not implemented	Limited programs	Regular programs	Innovative programs based on ijtihad
		3	No integration	Minimal integration	Integrated into some programs	Integrated across all core programs	Fully integrated into OPZ policies
		4	None	Incidental	Annual	Regular and structured	Comprehensive programs + external collaboration
Technological innovation for green accountability	10	1	No platform	Platform exists but not real-time	Real-time for transactions only	Real-time transactions + partial reporting	Full real-time transparency
		2	No system	Basic system	Limited indicators	Comprehensive indicators	Integrated public dashboard
		3	None	Very limited	Some green technologies adopted	Green technologies widely used	Established as operational standard
		4	None	Passive collaboration	Limited collaboration	Active program-based collaboration	Strategic collaboration with major impact

Table 8. Operationalization of measurement scales for variables and indicators of distribution and utilization activities

Variable	Weight	Indicator	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5
Environmentally friendly financial accountability	22	1	No report available	Report available but not compliant with standards	Compliant with Sharia or GRI standards	Compliant with Sharia and GRI but incomplete	Comprehensive, integrated, and audited report
		2	<1% allocated	1–3% allocated	4–7% allocated	8–12% allocated	>12% allocated
		3	Non-compliant	<50% regulatory compliance	50–75% compliance	Full compliance with core regulations	Very high compliance + internal Sharia policies
		4	No audit	Internal audit without environmental aspects	Internal audit includes environmental aspects	Internal & external audits include environmental aspects	Routine audits + follow-up on recommendations
Sustainable governance	20	1	No policy	Policy exists but not implemented	Partially implemented	Institutionally implemented	Periodically reviewed and updated
		2	No integration	Very limited integration	Integrated into some programs	Integrated across all core activities	ESG constitutes the core of OPZ strategy
		3	Not involved	Sporadic involvement	Partial involvement	Regular involvement	Acts as a key decision-maker
		4	No participation	Limited consultation	Annual consultation	Involved in evaluation	Full and systematic multi-stakeholder engagement
Environmental awareness and action	15	1	No program	Small-scale program	Sporadic programs	Regular and structured programs	Comprehensive programs with significant impact
		2	Not implemented	Basic practices	>30% paperless	>60% paperless + waste management	Fully implemented green office
		3	None	One small program	Several annual programs	Regular and structured programs	Sustainable ecological infrastructure
		4	No report	Narrative report	Report covers some indicators	Comprehensive and measurable report	Integrated digital dashboard reporting
Mustahiq socio-economic sustainability	13	1	Not measurable	<5% reduction	5–10% reduction	11–20% reduction	>20% reduction
		2	No program	Small-scale program	Partial coverage of mustahiq	Majority of mustahiq served	Structured programs with significant outcomes
		3	None	One small program	Several basic programs	Medium-scale infrastructure	Sustainable infrastructure + monitoring
		4	None	1–2 MSMEs	3–5 MSMEs	6–10 MSMEs	>10 MSMEs with mentoring support
Sharia compliance and *maqasid al Sharia*	20	1	No audit	Internal audit	Internal audit + partial standards	Regular external audit	Comprehensive audit + follow-up actions
		2	None	Exists but not implemented	Limited programs	Regular programs	Innovative ijtihad-based programs
		3	No integration	Minimal integration	Integrated into some programs	Integrated into core programs	Fully integrated into OPZ policies
		4	None	Incidental	Annual	Regular and structured	Comprehensive programs + external collaboration
Technological innovation for green accountability	10	1	No platform	Platform exists but not real-time	Real-time limited to transactions	Real-time transactions + partial reporting	Full real-time transparency
		2	No system	Basic system	Limited indicators	Comprehensive indicators	Integrated public dashboard
		3	None	Very limited	Some green technologies adopted	Green technologies widely used	Established as an operational standard
		4	None	Passive collaboration	Limited collaboration	Active collaboration	Strategic collaboration with major impact

Table 9. Operationalization of measurement scales for variables and indicators of reporting activities

Variable	Weight	Indicator	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5
Environmentally friendly financial accountability	22	1	No report available	Report available but not compliant with standards	Compliant with Sharia or GRI standards	Compliant with Sharia and GRI but incomplete	Comprehensive, integrated, and audited report
		2	<1% allocated	1–3% allocated	4–7% allocated	8–12% allocated	>12% allocated
		3	Non-compliant	<50% regulatory compliance	50–75% regulatory compliance	Full compliance with core regulations	Very high compliance + internal Sharia policies
		4	No audit	Internal audit without environmental aspects	Internal audit includes environmental aspects	Internal & external audits include environmental aspects	Routine audits + follow-up on recommendations
Sustainable governance	20	1	No policy	Policy exists but not implemented	Partially implemented	Institutionally implemented	Periodically reviewed and updated
		2	No integration	Very limited integration	Integrated into some programs	Integrated across all core activities	ESG constitutes the core of OPZ strategy
		3	Not involved	Sporadic involvement	Partial involvement	Regular involvement	Acts as a key decision-maker
		4	No participation	Limited consultation	Annual consultation	Involved in evaluation	Full and systematic multi-stakeholder engagement
Environmental awareness and action	15	1	No program	Small-scale program	Sporadic programs	Regular and structured programs	Comprehensive programs with significant impact
		2	Not implemented	Basic practices	>30% paperless	>60% paperless + waste management	Fully implemented green office
		3	None	One small program	Several annual programs	Regular and structured programs	Sustainable ecological infrastructure
		4	No report	Narrative report	Report covers some indicators	Comprehensive and measurable report	Integrated digital dashboard reporting
Mustahiq socio-economic sustainability	13	1	Not measurable	<5% reduction	5–10% reduction	11–20% reduction	>20% reduction
		2	No program	Small-scale program	Partial coverage of mustahiq	Majority of mustahiq served	Structured programs with significant outcomes
		3	None	One small program	Several basic programs	Medium-scale infrastructure	Sustainable infrastructure + monitoring
		4	None	1–2 MSMEs	3–5 MSMEs	6–10 MSMEs	>10 MSMEs with mentoring support
Sharia compliance and *maqasid al Sharia*	20	1	No audit	Internal audit	Internal audit + partial standards	Regular external audit	Comprehensive audit + follow-up actions
		2	None	Exists but not implemented	Limited programs	Regular programs	Innovative ijtihad-based programs
		3	No integration	Minimal integration	Integrated into some programs	Integrated into core programs	Fully integrated into OPZ policies
		4	None	Incidental	Annual	Regular and structured	Comprehensive programs + external collaboration
Technological innovation for green accountability	10	1	No platform	Platform exists but not real-time	Real-time limited to transactions	Real-time transactions + partial reporting	Full real-time transparency
		2	No system	Basic system	Limited indicators	Comprehensive indicators	Integrated public dashboard
		3	None	Very limited	Some green technologies adopted	Green technologies widely used	Established as an operational standard
		4	None	Passive collaboration	Limited collaboration	Active collaboration	Strategic collaboration with major impact