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Knowledge and Awareness of Microenterprises Regarding Green Accounting

Dzikrya Syukriyana[1], Tulus Prijanto[2], Andri Veno[3]

Abstract

Awareness of environmental sustainability has become a global concern, including in the business world. Although environmental issues are more often associated with large-scale industries, microenterprises also play an important role in preventing environmental damage through their business activities. By understanding the level of knowledge and awareness of micro-enterprises regarding green accounting, we can take the necessary steps to support its implementation. This study aims to determine the level of knowledge and awareness of green accounting among micro-enterprises. The concept of green accounting, in conjunction with Islamic teachings on moral values, ethics, and the goal of public benefit, closely aligns with Islamic values of environmental responsibility, justice, and accountability. This study is a survey study. Data was collected directly from respondents through a questionnaire. The collected questionnaire data were analyzed using descriptive statistics. The majority of respondents believe that green accounting is important because it can improve business image, increase cost efficiency, and attract more customers. However, this high level of awareness has not been matched by its implementation. This study recommends that green accounting be implemented in microenterprises with the simplest approaches, such as using environmentally friendly raw materials, waste management, recycling, and green energy.

Keywords : Environmental Sustainability; Green Accounting; Micro-Enterprises; Small Business; Corporate Governance.

INTRODUCTION

The environmental crisis has become a global topic of discussion. Severe environmental damage globally is impacting the quality of life of current and future generations (Mallik and Alka 2015). Environmental

[1]STIE Swasta Mandiri, Surakarta, Indonesia.
[2]STIE Swasta Mandiri, Surakarta, Indonesia.
[3]Universitas Tiga Serangkai, Surakata Indonesia.
Email : dzikriya.syukriyana@gmail.com

degradation, climate change, waste accumulation, and the depletion of natural resources have become major global concerns that affect not only large corporations but also micro, small, and medium enterprises (MSMEs), (Hossain, M. I.; Jamadar, Y.; Islam, 2025). However, most microenterprise actors still prioritize short-term financial survival and often neglect environmental considerations in their operations. This condition creates an imbalance between economic growth and environmental sustainability. Various efforts have been made to address the environmental crisis, both nationally and internationally (Sabihaini; et al., 2024).

Amid the intense pursuit of the Sustainable Development Goals (SDGs), Accounting plays a role in ensuring the SDGs program is achieved. Green accounting has emerged as an important approach to integrating environmental considerations into business accounting practices. Green accounting helps entities measure the environmental costs of their business activities, such as reducing carbon emissions, managing waste, and using natural resources efficiently (Mallik and Alka 2015; Sudarminto and Harto 2023). Through green accounting, business actors are encouraged to recognize the environmental consequences of their activities and to implement more sustainable business practices. It integrates the economy, society, and environment, making it easier to measure sustainability (Kanaka 2018).

Awareness of environmental sustainability has become a global concern, including in the business world. Although environmental issues are more often associated with large-scale industries, microenterprises also play a vital role in protecting the environment through their business activities. In Indonesia, micro, small, and medium enterprises (MSMEs) play an important role in the economy (Chaira et al. 2024; Narsi, Bessi, and Manehat 2023; Rusmariani, Tripalupi, and Dzikrayah 2025). Even MSMEs play an important role in the global economy (Wielgórka 2016). In a press release on August 24, 2024, the Coordinating Ministry for Economic Affairs stated that MSMEs contribute 61% to Gross Domestic Products (GDP) and employ 97% of the total workforce. MSMEs have a responsibility to implement green accounting in their business activities (Narsi et al., 2023).

Microenterprises frequently face challenges related to waste management, excessive use of natural resources, inefficient energy consumption, and limited awareness of environmental responsibility. In 2014, the Deputy for Environmental Pollution Control at the Ministry of Environment stated that, “The production activities of MSMEs contributed significantly to environmental pollution” (Purnamawati & Supriyadi, 2014). Based on an investigation by Dinas Lingkungan Hidup dan Kehutanan, the Bengawan Solo River is polluted by alcohol, batik, and pig farm waste (Tengah, 2019). Modern consumers are increasingly concerned about environmentally friendly products and sustainable business practices, making green accounting increasingly relevant to, business competitiveness (Sohu et al., 2024).

The concept of thought embodied in Islam is conveyed in the Quranic verse Al-A'raf (7:56), which states: "And do not cause corruption on the earth after it has been set in order..." This verse explicitly prohibits humans from causing harm or mischief on the earth, including behavior that destroys the environment and natural resources. This is highly relevant to the principles of green accounting, which emphasize measuring and preventing negative environmental impacts. One hadith that conveys this statement is: Anas ibn Malik (r.a.); "There is no Muslim who plants a crop or plants a seed, then a bird, a human, or an animal eats from it, but that is considered charity for him."(Bukhari & Muslim)

The significant role of MSMEs in the Indonesian economy is one factor contributing to the success of sustainability programs. MSMEs' knowledge and understanding of green accounting is very important for business and environmental sustainability, especially in waste processing and energy savings (Indriastuti and Mutamimah 2023). For that reason, this study aims to determine the level of knowledge and awareness among microenterprises regarding green accounting. This is because the number of microenterprises in Indonesia exceeds that of small and medium enterprises. By knowing the level of knowledge and awareness of microenterprises about green accounting. We can take the necessary steps to support the implementation of green accounting for microenterprises. This study is expected to contribute theoretically to the development of accounting and sustainability literature, particularly in the context of microenterprises. In practice, the result of this research may provide insight for business actors, policymakers, educational institutions, and other stakeholders on the importance of integrating environmental responsibility into accounting practices (Sari et al., 2023)

LITERATUR REVIEW

Legitimacy theory explains that organizations strive to ensure that their activities align with the norms, values, and expectations of the society in which they operate (John Dowling and Jeffrey Pfeffer, 1975). Legitimacy is the condition in which an organization's value system is perceived as aligned with the broader social value system. Organizational legitimacy can be achieved and maintained through communication strategies, including the disclosure of social and environmental information. From a legitimacy theory perspective, green accounting disclosure is seen as a means for companies to demonstrate environmental concern and gain social acceptance (Mark C. Suchman, 1995). For MSMEs, legitimacy is crucial for building trust with consumers, the public, and the government. Implementing green accounting can be a response to social pressures and environmental regulations, while also serving to maintain business continuity (Latifah, Sri Wahjuni; Soewarno, 2023). Recent research further underscores that legitimacy theory remains a key theoretical basis for explaining corporate sustainability and environmental reporting practices. Organizations are increasingly disclosing environmental and climate information to maintain social legitimacy, meet stakeholder expectations, and reduce the legitimacy gap created by environmental impacts. Providing high-quality sustainability information not only enhances an organization's reputation but also strengthens stakeholder trust and supports its long-term sustainability (Park, et al., 2023).

Green Accounting

Green accounting is a branch of accounting that integrates environmental aspects into conventional accounting systems. Green accounting focuses not only on recording financial transactions but also on identifying, measuring, and reporting the costs and benefits arising from a company's environmental activities. (John Dowling and Jeffrey Pfeffer, 1975). Green accounting serves as a tool for disclosing an organization’s environmental impact and as a means of social accountability to stakeholders. The application of green accounting includes recognizing environmental costs, measuring environmental impacts, and disclosing environmental information in financial statements and sustainability reports (Rob Gray, Jan Bebbington, and Diane Walters, 1993). Green accounting also supports efficient communication between organizations and stakeholders by presenting clear information on environmental performance and programs throughout their lifetime. This disclosure enhances stakeholder confidence, supports corporate fairness, and enables investors, regulators, and customers to assess an organization's environmental responsibility alongside its financial performance. As a result, green accounting has become an essential part of environmental reporting and management (Burritt et al., 2023)

Islamic Perspective

Allah has created the universe and its contents in balance. Humans have a responsibility to maintain this balance and not cause environmental damage. As He said in QS. Ar-Rahman (55:7-9)"...And He has raised the heavens and placed *mīzān* (balance). So that you do not exceed the balance limits. And uphold the balance fairly and do not reduce the balance." This verse emphasizes that God created nature in balance, and that humans are commanded not to disturb that balance — in line with the goal of green accounting, which encourages businesses to pay attention to ecological impacts to maintain balance with long-term needs.

The view of humans as caliphs on earth (QS. Al-Baqarah [2]:30) "It is Him who created everything on earth for you; then He turned to the heavens and perfected them as seven heavens. And He is All-Knowing of all things." This reinforces this view. Humans are tasked with managing, not exploiting, and maintaining the balance and sustainability of life (Kamla, Rania et al., 2006). The concept of humans as *khalifah* (representatives) on earth, as explained in Surah Al-Baqarah (2:30), further emphasizes this obligation. Humans are entrusted with the responsibility to manage natural resources wisely, prevent environmental damage, and ensure that economic activities promote *'adl* (justice), *maslahah* (social welfare), and are sustainability. In this context, green accounting serves as a practical tool for implementing Islamic ethical values by recognizing environmental responsibility, promoting transparency, and ensuring accountability for the preservation of natural resources in accordance with *Maqasid al-Shariah* (the objectives of Islamic law) (Khasanah et al., 2024)

Previous Study

Green accounting has a positive impact on financial performance, firm value, SDGs, and provides benefits to stockholders and stakeholders (Tripalupi et al., 2024). The environmental concerns shown by MSMEs add value to ensuring business sustainability (Indriastuti & Mutamimah, 2023). Detailed reporting of environmental costs can enhance corporate accountability and transparency, thereby attracting investors and generating consumer interest in eco-friendly products (Abdullah & Yuliana, 2018). On the other hand, recent research shows that implementing green accounting encourages companies to improve resource utilization, reduce environmental risks, and strengthen long-term business competitiveness. Incorporating environmental data into accounting systems enables organizations to make more sustainable strategic decisions while simultaneously enhancing stakeholder trust and corporate legitimacy (Mail et al., 2024).

RESEARCH METHOD

This is a quantitative study with survey research. The focus is to provide a detailed description of the facts on the ground, while highlighting the narrative and unique context of the research subjects. This study used primary data collected from respondents. The respondents were micro-enterprises in Indonesia. Data collection was conducted using questionnaires. Descriptive statistical analysis is a statistical method used to analyze collected data by describing or depicting the data as it is (Sugiyono 2017). Data is presented in tables, diagrams, graphs, and other formats.

RESULTS AND DISCUSSION

Results

This study obtained 206 respondents from micro entrepreneurs. Respondents were obtained through questionnaires, either directly in person or via social media, WhatsApp groups, and personal messages. Based on the data obtained, the following are some characteristics of respondents in this study.

Table 1: Respondents based on gender

Gender	Number	Percentage
Male	97	47%
Female	109	53%
Total	206	100%

(Source: Primary data, 2025)

Respondent data by gender were displayed to understand the participation of males and females in this study. Table 3.1 shows that the participation rate for female is higher than male. The data shows that female participation was 53% (109 people), while male participation was only 47% (97 people). Respondents are micro-entrepreneurs in Central Java. Data were collected from July to August 2025.

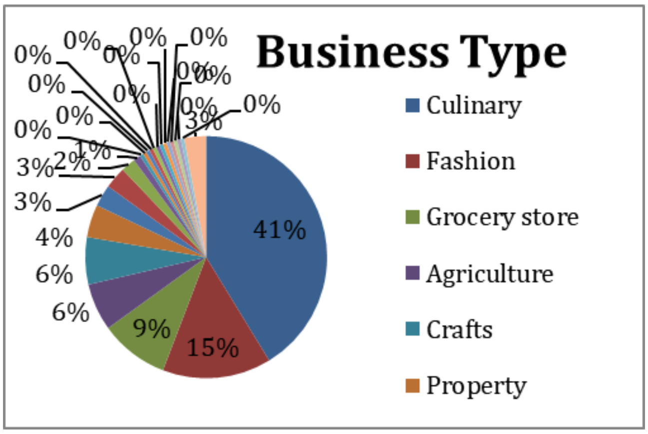

Figure 1: Respondent data based on business type

This research successfully collected respondent data from micro-entrepreneurs across various business types. Approximately 24 types of businesses were collected. Based on the collected respondent data, the types of businesses run include culinary (41%), fashion (15%), grocery stores (9%), agriculture and crafts (6% each), property (4%), and others.

Table 2: Respondent data based on number of employees

Number of Employees	Number of Microentreprises	Number of Employees	Number of Microentreprises
0	22	10	5
1	52	12	3
2	47	15	5
3	22	17	1
4	15	20	4
5	18	22	1
6	3	30	3
7	1	150	1
8	3	**Total Respondent**	206

Source: Primary data, 2025

Respondent data shows that some businesses are run independently, while others employee employees. The number of employees varies, from 1 to 150. The following data shows the number of micro-enterprises and the number of employees they employ.

People take action for several reasons. One of the most fundamental is knowledge. Therefore, one of the questions asked respondents was, "Have you ever heard of the terms Green Accounting or Environmental Accounting?" Respondents' answers can be seen in the following diagram;

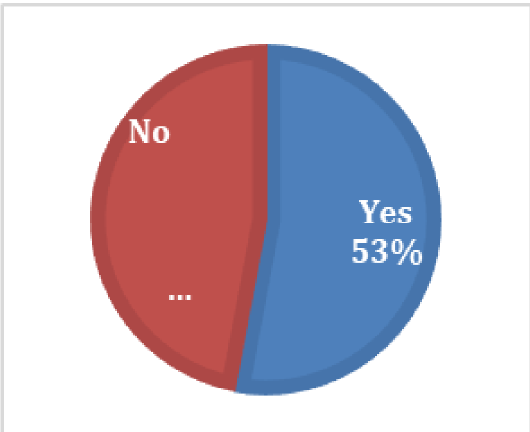

Figure 2: Micro entrepreneurs' knowledge of green accounting

Of the 206 respondents, 109 (53%) reported hearing of or being familiar with green accounting, and 97 (47%) reported never having heard of the term. Based on the data collection process from beginning to end, the data fluctuated between 46% and 48% of respondents had never heard about green accounting or similar terms.

In this section, respondents were asked the question, "How important do you think it is to record costs related to the environment, for example, waste management, energy, and water?"

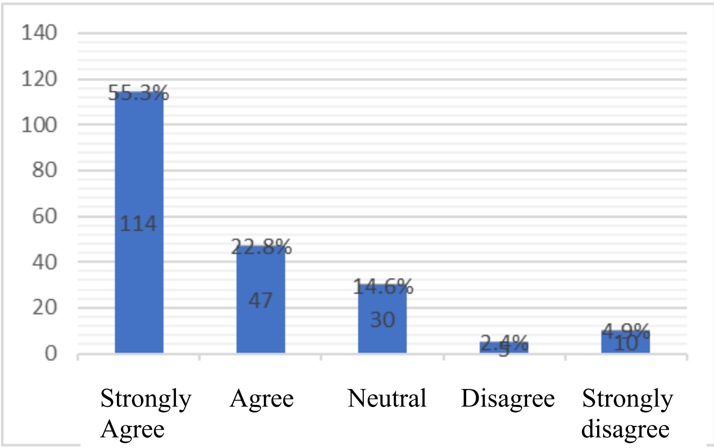

Figure 3: Urgency of green accounting for microenterprises

Based on the data obtained, 55.3% of respondents strongly agree, 22.8% agree, 14.6% neutral, 2.4% disagree, and 4.9% strongly disagree. This indicates that 79.1% of micro entrepreneurs are aware of the importance of green accounting. The reminder considered green accounting to be less important or even unimportant. Environmental Impact Management Policies in Microenterprises.

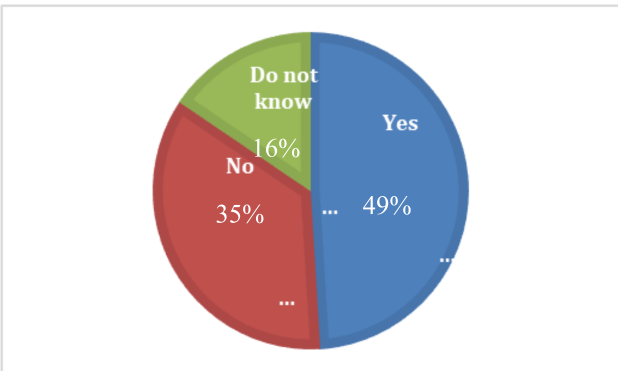

Figure 4: Environmental impact management policies in microenterprises

Of the 79.1% of micro entrepreneurs who consider green accounting important, only 49% have an environmental impact management policy, 35% stated they do not have one, and 16% stated they do not know. This demonstrates a disconnection between awareness and implementation.

To determine micro-entrepreneurs' perspectives on green accounting, this study proposed five statements. Each statement was given five response options: very agree, agree, less agree, disagree, and very disagree. These five responses indicate the level of perspective of micro-entrepreneurs on green accounting, ranging from level 1 (very disagree) to 5 (very agree). The frequency of responses from 206 respondents is shown in the following table;

Table 3: Micro entrepreneurs' perspectives on green accounting

Perspective level	Green accounting helps improve the positive image of my business	Implementing green accounting can increase cost efficiency	Environmental cost reporting can attract more environmentally conscious consumers.	I am willing to implement green accounting if there is guidance and training.	The government should support MSMEs to implement green accounting
5	88	58	75	78	108
4	84	95	90	88	80
3	31	41	33	32	12
2	2	10	7	5	4
1	1	2	1	3	2
Total	206	206	206	206	206

Source: Primary data, 2025

Based on the research data provided, here is a formal analysis of the perceptions regarding the implementation of green accounting among the 206 surveyed participants:

1. **Brand Image and Consumer Attraction**

   The data indicate a strong consensus that green accounting positively impacts business reputation. Business Image: Approximately 83.5% of respondents (172 out of 206) agree or strongly agree that green accounting improves their business image. Consumer Attraction: Similarly, 80.1% of participants believe that environmental cost reporting is an effective tool to attract environmentally conscious consumers.

2. **Operational Efficiency and Cost Management**

   There is a strong confidence in the economic benefits of sustainable practices. Cost Efficiency: A significant majority (74.3%) of respondents agree or strongly agree that implementing green accounting can improve cost efficiency. Neutrality: A small segment (19.9%) remains neutral on whether these practices directly correlate with cost savings.

3. **Readiness and Institutional Support**

   The findings reveal a strong willingness to adopt these practices, provided external assistance is available. Willingness to implement: 80.6% of respondents expressed a readiness to implement green accounting if they were provided with proper guidance and training. Government Role: There is an overwhelming demand for institutional intervention, with 91.3% of participants agreeing or strongly agreeing that the government should support MSMEs in this transition. Notably, "Strongly Agree" was the most frequent response for this category, with 108 votes.

Based on the data obtained from the respondents, the following data were obtained for the mean, median, mode, standard deviation, minimum and maximum values.

Table 4: Measures of central tendency

Median	Mean	Modus	Stdev	Min	Max
21,00	20,85	20,00	3,36	5,00	25,00

Source: Primary data, 2025

Suharsimi Arikunto (2006) explains that data can be divided into three classes: low, medium and high. This method is used to determine the position of the respondent's scores compared to the average score of all data. If the respondent's score is below the mean minus the standard deviation (SD), it is categorized as low. If the respondent's score is around the average (between mean – SD and mean + SD), it is categorized as medium. And if the respondent's score is above the mean + SD, it is categorized as high.

$$X < \bar{X} - \sigma \quad : \text{Low}$$
$$\bar{X} - \sigma \leq X \leq \bar{X} + \sigma \quad : \text{Medium}$$
$$X > \bar{X} + \sigma \quad : \text{High}$$

Explanation: X = Statement score
$\bar{X}$ = Average score (mean)
σ = Standard deviation

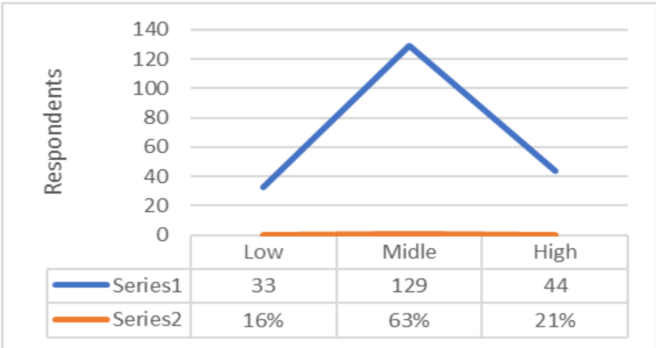

Figure 5: Grouping of respondents based on perspective level

The graph above shows that 33 respondents (16%) are in the low perspective level group, 129 respondents (63%) are in the medium perspective level group, and 44 respondents (21%) are in the high perspective level group. This graph demonstrates a good level of understanding among the majority of microenterprises.

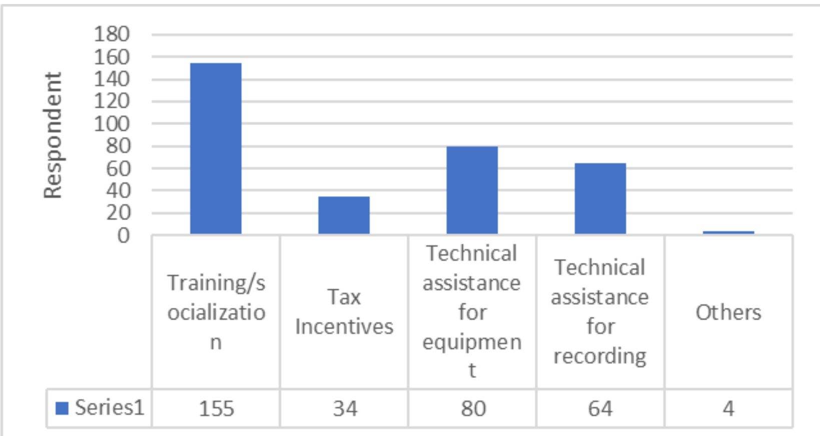

Figure 6: Support expected by microenterprises to implement green accounting

In this section, respondents can propose various forms of support they need to implement green accounting. Figure 3.6 shows that 155 micro-enterprises expect support in the form of training and outreach. 34 micro-enterprises expect tax incentives for implementing green accounting. 80 micro-enterprises expect technical assistance with equipment, including waste-processing facilities and solar panels. 64 micro-enterprises expect technical assistance with recording or reporting, as well as other support.

Discussion

Microenterprises play a significant role in achieving the SDGs in Indonesia, as they contribute to the Indonesian economy. Micro-enterprises are the backbone of the Indonesian economy. Its contribution to Indonesia's gross domestic product (GDP) exceeds 60%, and it absorbs labor (Supriyanto 2024). However, despite their positive contributions, microenterprises' activities also have the potential to cause environmental impacts, such as production waste, excessive energy consumption, and the use of environmentally unfriendly materials (Pratama, Wandi; Sisdianto, 2024). The concept of green accounting aligns with Islamic teachings in terms of moral values, ethics, and the goal of maslahah (public benefit). Although the Quran and Hadith do not mention "green accounting" explicitly, their principles closely align with Islamic values of environmental responsibility, justice, and accountability (Erianto, Ridho; Hasibuan, 2023).

The concept of green accounting with Islamic teachings in terms of moral values, ethics, and the objectives of maslahah (public benefit) taught in Islam, although the Qur'an and Hadith do not mention "green accounting" literally, the principles are very much in line with Islamic values regarding responsibility towards the environment, justice, and accountability. The analysis showed that the majority of respondents believe green accounting is important because it can improve a business's image, improve cost efficiency, and attract more customers. However, this high level of awareness has not been matched by its implementation. Data shows that fewer microbusinesses have environmental impact management policies.

This is because many microbusinesses still lack an understanding of how to implement green accounting. They require intensive training and ongoing technical assistance to facilitate the effective implementation of green accounting. While others (16%) consider green accounting to be unimportant. Microenterprises that exhibit a low level of awareness of green accounting should not be immediately subjected to regulatory sanctions, as their limited awareness is often associated with insufficient information, inadequate skills, and limited access to the resources required for its implementation. Instead, they require targeted education and awareness-raising initiatives to improve their understanding of green accounting and facilitate its implementation. These findings suggest that awareness of green accounting does not necessarily translate into its implementation. Therefore, the most effective approach is not only to raise awareness but also to identify and address the factors that impede the implementation of green accounting. The development of simple, practical implementation guidelines would facilitate the adoption of green accounting among microenterprises by reducing the perception that it is complex and costly. Stronger regulator measures are also required, as the findings reveal that 16% of the respondents exhibit a low level of awareness.

Respondents hoped for government support for micro-enterprises in implementing green accounting. This could include providing facilities such as training, outreach, tax incentives, and technical assistance with equipment and record-keeping. This would significantly assist both micro-enterprises and the government in achieving environmental sustainability.

CONCLUSION

Awareness of environmental sustainability has become a global concern, including in the business world. Although environmental issues are often associated with large-scale industries, micro enterprises also play a vital role in protecting the environment through their operations. Green accounting isn't just about reporting—it also emphasizes the values of responsibility, preventing harm, and contributing to environmental well-being in business activities. The hadith about planting crops as charity reflects these principles: the value of sustainable benefits, responsibility for nature, and concern for the lives of other creatures.

The significant role of MSMEs in the Indonesian economy is one factor contributing to the success of sustainability programs. The majority of respondents believe green accounting is important because it can improve a business's image, improve cost efficiency, and attract more customers. However, this high level of awareness has not been matched by its implementation. Many microenterprises have not yet implemented green accounting due to the lack of information and knowledge about it. Micro-enterprises expect support from various parties in various forms, such as training, outreach, tax incentives, technical assistance for equipment and recording, and others.

Green accounting serves as a means to realize the principle of responsibility, justice, and sustainability in economic activities. Through green accounting, business actors can record, measure, and report the environmental impacts of their business activities. This aligns with Islamic teachings that prohibit causing harm to the earth. This study recommends that green accounting be implemented in micro-enterprises by starting with the simplest approaches, such as using environmentally friendly raw materials, waste management, recycling, and energy conservation. Furthermore, micro-enterprises are also assisted in preparing simple bookkeeping using applications.

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