

## Identification of Environmental, Social, and Governance Implementation in Micro, Small, and Medium Enterprises

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**ABSTRACT:** Environmental, Social, and Governance (ESG) has become a stakeholder demand for companies today. However, not all companies have successfully integrated the concept into the business model and gained value. In Micro, Small, and Medium Enterprises (MSMEs), the implementation of ESG is considered insignificant. Therefore, this study aims to identify ESG practices and gain insight into MSME's understanding of ESG. Hence, it provides an initial overview of current ESG practices as part of non-financial activities in the MSME sector. This research is also expected to provide additional insight to regulators. Research data was obtained through questionnaires on ESG and analyzed according to the responses of each pillar. Enumerators then guided the questions to MSMEs in the Sub-districts of Nanggawer Mekar, Pabuaran Mekar, and Pondok Rajeg. MSMEs in these sub-districts were selected because Nanggawer Mekar, Pabuaran Mekar, and Pondok Rajeg are actively involved in the Ministry of Environment and Forestry climate village program. Results show that from the initial identification of ESG understanding in MSMEs, respondents know about climate change issues and their impact on the environment, society, and governance. However, respondents' understanding varies according to the perceived benefits to their business. In addition, respondents have not implemented elements of the ESG concept systematically and holistically. Therefore, the ESG concept has not been integrated into their strategy or business model. The study is limited in scope and area. Therefore, research also might be developed into empirical research to support the recent findings. Further, this research studies MSME's initial understanding of ESG activities.

**KEYWORDS:** Environmental, Social, and Governance, Micro, Small, and Medium Enterprises

### I. INTRODUCTION

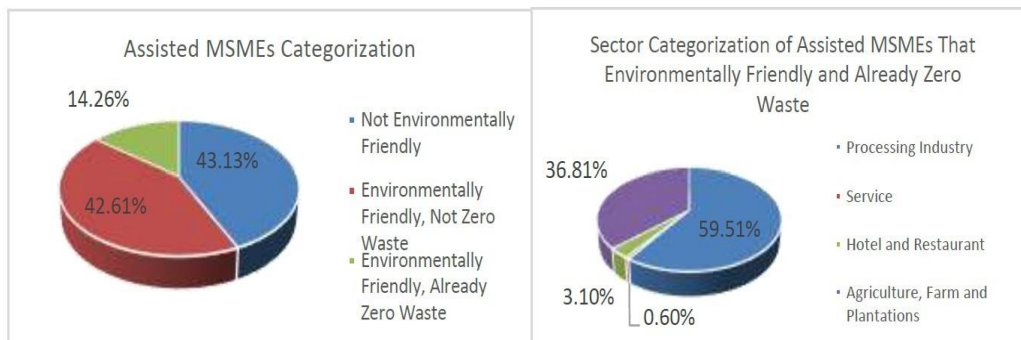
Global conditions impact changes in nature, the environment, and social life. This condition puts the industry as the cause of climate change, deforestation, and other environmental damage (Susanto & Meiryani, 2019). Therefore, stakeholders pressure businesses to consider the impact of their operations on the environment, society, and governance (ESG).

Based on *stakeholder theory*, the industry must consider the stakeholders' interests parallel to the owners' (Ljung & Enache, 2022; Mohammad & Wasiuzzaman, 2021). The purpose of business, which was initially dominated by achieving profits and increasing owners' wealth, is now required to balance these interests with the interests of *stakeholders*. Stakeholders, especially contractual stakeholders, can influence SMEs' decisions to adopt environmental innovations (Esposito De Falco et al., 2021). Thus, businesses are now considering environmental, social, and governance practices to gain legitimacy from *stakeholders* and society by integrating them with the business model and creating added value.

Not all businesses successfully implement ESG practices in their operational activities. ESG practices are believed to contribute to long-term value creation. ESG is also considered to impact business growth and sustainability significantly (Putri & Ros Bangun, 2023). On the other hand, implementing these practices is costly and can drive additional costs that negatively affect the company's financial performance (Duque-Grisales & Aguilera-Caracuel, 2021). Therefore, some businesses are successful in integrating ESG principles into their strategies and business models, but other businesses are contrarily in getting added value from applying ESG principles. Thus, businesses need information to communicate their ESG practices to *stakeholders*. Research by Mohammad and Wasiuzzaman (2021) proves that disclosing environmental, social, and governance information improves company performance. Likewise, a discourse on how business actors have implemented and understood the ESG concept at the corporate level and in micro, small, and medium enterprises is needed.

Micro, Small, and Medium Enterprises (MSMEs) are the sector that contributes dominantly to the economy in most countries (Akhtar et al., 2023; Alagpuria, 2021; Putri & Ros Bangun, 2023; Susanto & Meiryani, 2019). In Indonesia, it contributes around 60% to the Gross Domestic Production ([www.ekon.go.id](http://www.ekon.go.id), 2023). Although contributing significantly to the country's economic growth, this sector insignificantly pays more attention to the environment. Assistance project by Bank Indonesia found that of 1,143 MSMEs, around 57.4% did not implement environmentally friendly businesses (Putri & Ros Bangun, 2023), though the government has issued provisions related to sustainability in business with POJK No. 51 / POJK.03 / 2017. Figure 1 below provides information on the category of MSMEs assisted by Bank Indonesia, which has implemented zero waste and is environmentally friendly. MSMEs, assisted by Bank Indonesia, consist of 43.13% of businesses that are not environmentally friendly, 42.61% of businesses that are environmentally friendly but do not apply zero waste, and 14.26% of businesses that are environmentally friendly and apply zero waste. Furthermore, Figure 1 also shows that MSMEs, assisted by Bank Indonesia, are dominated by the processing industry sector at around 59.51%; the rest consist of the service sector, hotels and restaurants, agriculture, livestock, and plantations.

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Source: Putri and Ros Bangun (2023)

Figure 1. Bank Indonesia's Assistance to MSMEs

Accordingly, environmental, social, and governance issues have become necessary for the business. In Indonesia, this has been outlined in a government rule that organizations must pay attention to sustainability issues. However, not all sectors have significantly contributed, especially the MSMEs. Even though the MSMEs sector contributes significantly to the economy, this sector is also considered a threat to environmental damage (Susanto & Meiryani, 2019). Therefore, this study is interested in looking at and identifying the MSMEs understanding in activities relevant to environmental, social, and governance (ESG).

This research is limited to ESG topics focused on MSMEs, especially MSMEs in the Sub-district of Nanggewer Mekar, Pabuaran Mekar, and Pondok Rajeg, Cibinong District, Bogor Regency. The data collected comes from MSMEs actors in the three sub-districts of Cibinong. This study aims to identify the application of ESG principles in the MSMEs sector, especially MSMEs in the sub-district of Nanggewer Mekar, Pabuaran Mekar, and Pondok Rajeg, Cibinong District, Bogor Regency. Thus, this research can map the understanding of MSMEs in ESG practices to support sustainable development.

## II. LITERATURE REVIEW

### Environmental, Social, Governance (ESG)

Previous studies have discussed how ESG practices are applied to the industrial sector. However, the study still focuses on large companies. On the other hand, the MSMEs sector contributes significantly to the country's economic growth. Therefore, this research is relevant because it identifies and provides an overview of ESG principles that are practiced by the MSMEs sector.

ESG is a concept that underlies the company's obligation to improve social welfare, considering the long-term interests of stakeholders (Mohammad & Wasiuzzaman, 2021). ESG consists of three pillars namely Environmental (E), Social (S), and Governance (G). These pillars are commonly used to measure the sustainability of organizations or businesses, including organizational investments. These three pillars are also often identified with corporate social responsibility practices. These pillars include the following (Putri & Ros Bangun, 2023):

#### Environmental (E)

The environment is one of the elements that can take the form of the production of goods; if the company offers goods, then the services provided are concerned with the impact on the environment, for example, the impact on the weather (energy transition, greenhouse gas emissions). This is because every business involves the use of energy and resources.

#### Social (S)

The social element describes the relationship of the business with its environment and the surrounding community in which it operates. This social element consists of the business's concern for its employees, its relationship with employees, diversity, and whether it provides its rights in business operations. In addition, this element usually covers how the business builds partnerships with the surrounding community.

#### Governance (G)

The governance element involves transparency, board composition, ethics, and compliance. Specifically, it encompasses the enterprise's internal systems practices, controls, and business procedures.

ESG has become the focus of investors when investing their capital. ESG then becomes the basic concept applied in investment. The integration of the ESG concept into responsible investment is outlined in the ESG principles of the investor associations that are members of the *Principles for Responsible Investment* (PRI) agreement. PRI integrates ESG issues in investment analysis and decision-making processes. As of the end of 2021, PRI has reported the growth of *Assets Under Management* (AUM), which reached US\$121.3 trillion and, to date, has reached around 5000 *signatories* from more than 80 countries consisting of asset owners, investment managers, and service providers.

However, the ESG concept has yet to be widely considered by business actors in the MSMEs sector. Research related to ESG practices in the MSMEs sector still needs to be included to explain how ESG practices contribute to this sector. Previous research shows that the ESG concept benefits the management of MSMEs (Susanto & Meiryani, 2019). However, based on the assistance provided by Bank Indonesia, the actual contribution of MSMEs to environmental issues has been insignificant (Putri & Ros Bangun, 2023). Therefore, it is interesting to identify the picture of ESG practices in the MSMEs sector according to the understanding of the actors and the role of ESG in their business.

### Micro, Small, and Medium Enterprises (MSMEs)

Micro, small, and medium enterprises (MSMEs) can be classified according to the assets owned and the total sales turnover generated. They are classified as micro, small, and medium. Therefore, the characteristics of MSMEs can always be characterized by differences in factors such as location, business size, number of employees, amount of capital, organizational structure, ownership, and innovation and technology used (Ljung & Enache, 2022).

According to Law No. 20 of 2008 in Indonesia, MSMEs are divided into three productive business groups owned by individuals or

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individual business entities based on net assets excluding land and buildings of business premises, or sales proceeds. In 2021, this grouping was adjusted with Law No. 11 of 2020 concerning Job Creation. As a derivative of Law No. 11 of 2020 on Job Creation, Government Regulation No. 7 of 2021 on the Facilitation, Protection, and Empowerment of Cooperatives and Micro, Small, and Medium Enterprises was enacted. This government regulation categorizes Micro, Small, and Medium Enterprises (MSMEs) based on business capital or annual sales revenue.

To date, MSMEs are considered a pillar of the country's economy and are a potential market to be developed (Putri & Ros Bangun, 2023; Susanto & Meiryani, 2019). In Indonesia, MSMEs contribute around 60% of the Gross Domestic Product ([www.ekon.go.id](http://www.ekon.go.id), 2023). MSMEs can also absorb the labor of around 97% of the total workforce in Indonesia. Thus, MSMEs are currently the main foundation of the Indonesian economy. MSMEs are then expected to be developed further to 'Go Global' and to become part of the *global value chain*.

### ESG Implementation in MSMEs

Previous literature studies suggest that ESG has attracted investors. Companies with good ESG performance get good rewards from investors, while companies with poor ESG performance are indicated to experience idiosyncratic risk (Mohammad & Wasiuzzaman, 2021). Therefore, according to Mohammad and Wasiuzzaman (2021), disclosure of ESG information has an impact on poor decision-making. This is because investors will make investment decisions based on financial performance and the company's non-financial performance altogether. In his research, Mohammad and Wasiuzzaman (2021) prove that ESG disclosure provides added value to shareholders and increases the company's competitiveness.

In the context of micro, small, and medium enterprises, much literature has tried to connect MSMEs with ESG activities. ESG issues are no longer limited to large companies but have also rolled into micro, small, and medium enterprises (Bielawska, 2022; Hideshi et al., 2021; Koirala, 2019). On the one hand, MSMEs have a significant role in various countries. However, some literature shows that this sector has yet to contribute significantly to environmental, social, and governance issues. A survey of developing countries in the Middle East and North Africa in the World Bank's Policy Research Working Paper shows that the MSMEs sector is experiencing delays in the transition to promote sustainability and green growth towards more sustainable businesses, and there are gaps between these transition processes (Ferrazzi & Tueske, 2022).

MSMEs face several challenges in implementing sustainability strategies (Barbagila et al., 2021; Ozkan et al., 2023). According to Barbagila et al. (2021), these challenges consist of the inability of MSMEs to fulfill ESG disclosures. In addition to non-financial information disclosure being optional in G20 countries, MSMEs need more funds and resources to prepare quantitative and qualitative information to contribute to and achieve SDG goals. Second, MSME's best practices are limited to achieving the SDGs goals. Due to MSME's dependence on funds, they can only use these for sustainability purposes for some time. Third, MSMEs need more resources to fulfill ESGs and SDGs.

In line with this, research in Australia shows evidence that ESG disclosure does not affect the profitability of MSMEs due to limited resources (Gholami & Sands, 2022). This is because the cost of collecting and disclosing information exceeds the incremental increase in profitability. Further, Jiang et al. (2023) and Yip and Yu (2023) in their study stated that the lack of resources, expertise, capacity, knowledge, and motivation makes it difficult for MSMEs to integrate ESG practices and manage their natural resources. Thus, strategies such as eco-friendly packaging, implementing transportation that pays attention to sustainability, and determining carbon consumption reduction targets are needed (Jiang et al., 2023).

Research on 87 MSMEs in Italy conducted by Gjergji et al. (2021) tried to prove a relationship between non-financial information and the cost of capital. The benefits of disclosing ESG information will be greater than the costs incurred. The results of this study found that in large companies, ESG disclosure can reduce the cost of capital. However, on the contrary, in MSME companies, environmental information disclosure triggers an increase in the cost of capital. This is due to MSMEs having less profit and higher costs (Gjergji et al., 2021). In line with this, Hideshi et al. (2021) also stated that ESG disclosure is less attractive to small companies because it provides little incentive and almost no benefit for obtaining loans at better interest rates. In addition, generally, MSMEs need more understanding of environmental impacts (Shalhoob & Hussainey, 2023) and environmental regulations. Thus, MSMEs need to realize the importance of sustainability (Ravi et al., 2023).

However, in contrast to previous research, a study of 600 MSMEs in South Africa claims that the commitment of MSMEs to environmental sustainability significantly predicts access to funding (Dzomonda, 2022). This result is then positively moderated by the good governance of the MSMEs.

Several studies on sustainability issues related to MSMEs have also been conducted in the Indonesian context (Dewi & Hastuti, 2024; Famiola & Wulansari, 2020; Narotama et al., 2023; Reynald & Gunawan, 2023; Susilowati & Barinta, 2024). A literature study by Reynald and Gunawan (2023) shows that MSMEs in Indonesia face issues related to marketing strategies, accounting records, and sustainability practices. Then, a more specific review of case studies in MSMEs was also carried out (Dewi & Hastuti, 2024; Susilowati & Barinta, 2024).

A study conducted by Dewi and Hastuti (2024) on MSME's Batik in Central Java shows that although these micro enterprises have paid attention to social and governance issues in a simple way, awareness of waste management and its impact on the environment is still lacking so increasing this awareness requires the involvement of various internal and external *stakeholders*. Furthermore, in line with this study, Susilowati and Barinta (2024) found that micro laundry businesses in Malang City, East Java, require a significant understanding of management practices and proactive green innovation efforts to improve environmental performance. This shows that the knowledge and understanding of MSME actors on environmental, social, and governance issues in Indonesia is diverse and still at a low level.

Analysis of the social and environmental motivations of MSME actors was also carried out by Famiola and Wulansari (2020) of 17 businesses in Jakarta and West Java. Their research found that the social and environmental practices carried out by MSMEs are more determined by the value perspectives of the owners. Therefore, the motivation for social and environmental implementation will depend on the personal values of the MSME owner, which are cascaded to the business values. Generally, the owner's values lie on moral motives rather than the organization's need for a competitive advantage.

Furthermore, empirical studies from Narotama et al. (2023) claims that MSMEs listed on IDX PEFINDO25 from 2016 to 2020 have an increasing trend related to ESG performance and disclosure. The regression analysis results in this study prove a positive significant influence between ESG performance and firm value. Based on this, MSME managers are advised to strengthen ESG activities as part of their business growth and value-creation strategies, including making ESG companies part of their investment portfolio (Narotama et al., 2023).

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Thus, previous environmental, social, governance and MSME studies still show mixed results. MSME's constraints cause the increased asymmetry of financial and non-financial information between MSME actors and stakeholders, especially investor groups. This causes the MSME sector to still show a small contribution in reducing the impact of ESG issues. Therefore, it is necessary to identify what kind of understanding MSMEs actors currently have about ESG.

### III. RESEARCH METHODS

This qualitative study aims to obtain a descriptive analysis of ESG in MSMEs. One hundred responses were obtained and processed from MSMEs with the help of enumerators to ensure the respondents understood the questions. The distribution and completion of the questionnaire were conducted over two months, and the measurement on the questionnaire used a binary scale of 1 and 0, with 1 for 'yes' and 0 for 'no' answers related to ESG questions. The responses were then analyzed to identify the subjective views on ESG issues directly from the MSMEs' actors.

The research was conducted at small, micro, and medium enterprises of sub-districts of Nanggung Mekar, Pabuaran Mekar, Pondok Rajeg in Cibinong District, Bogor Regency. This location was chosen because many of the MSMEs in these areas have been managed systematically with assistance from the MSMEs community. Another reason for choosing this location is that the community is aware of climate change issues, so efforts have been recognized and carried out preliminary to reduce the impact and control climate change. This is proven by four of Cibinong's sub-districts has been awarded as 'the climate village' in the National Climate Village Program in 2022 (Diskominfo Kabupaten Bogor, 2022).

The use of questionnaires to collect data is aimed at getting a direct picture of the perceptions and experiences of MSMEs (Shalhoob & Hussainey, 2023). The design of questions on the questionnaire referred to the research conducted by Ferrazzi and Tueske (2022), which applied questions commonly used in building corporate responsibility indicators. These questions are then divided according to the ESG components, which are elaborated into sub-components. Ferrazzi and Tueske (2022) developed corporate ESG accountability indicators relevant to the *Sustainability Accounting Standards Boards* (SASB) framework. The social sub-component consists of gender, education and skills, and training. At the same time, the sub-component of governance elements comprises of management practices, internal control, audit, compensation, and innovation. Furthermore, the environmental sub-components include environmental awareness, green management practices, and green measurement.

### IV. RESULTS AND DISCUSSION

#### Results

Based on the tabulation, responses were obtained from 100 MSME actors who had been interviewed during the two-month data collection period. The questions in this questionnaire begin by identifying the level of understanding of MSME actors regarding their financial management knowledge. Indicators in this group of questions are measured using the Likert scale: strongly agree, agree, disagree, and strongly disagree. These questions have also gone through the Pearson validity test, proving that each question is valid, as shown in Table 1.

**Table 1. Validity Test of Financial Management Indicators**

	Q1	Q2	Q3	Q4	Q5	Q6
r	0.619	0.740	0.718	0.829	0.809	0.751
r-table	0.196	0.196	0.196	0.196	0.196	0.196
	valid	valid	valid	valid	valid	valid

**Source:** Data analysis of respondents' data.

Referring to the responses, MSME actors generally consider financial management as necessary. MSME actors also realize that they have significant obstacles in obtaining funding due to financial reports that are less accountable and not in accordance with accounting standards. These findings are in line with previous study by Rusmanah and Ariyanto (2021) on MSMEs in the agricultural sector in Bogor Regency.

Furthermore, Table 2 shows the demographics of MSME actors. It shows that most respondents are being women, with a composition of 60%. This means that in sub-districts of Nanggung Mekar, Pabuaran Mekar, and Pondok Rajeg, MSMEs are dominated by women. Respondent's education background is generally high school, about 54%, and followed by junior high school for about 22%. Additionally, the remaining MSME actors have a higher education of about 21%. Meanwhile, in general, the age of these respondents is in the productive age category, with an average business age of 3 to 10 years.

**Table 2. Respondent Profile**

Attribute	Category	Frequency	Percentage (%)
Gender	Male	40	40
	Female	60	60
Education	Elementary School	2	2
	Junior High School	22	22
	Senior High School	54	54
	Graduate	21	21
	Other	1	1
Age	15 - 30	13	13
	31 - 40	25	25
	41 - 50	37	37
	51 - 60	23	23

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	>60	2	2
Business Age	<3	16	16
	3 - 5	36	36
	5 - 10	35	35
	> 10	13	13

**Source:** Data analysis of respondents' profiles.

Unlike the level of understanding in financial management knowledge, the questions related to the three ESG pillars were based on 'yes' and 'no' answers. This is intended to facilitate and capture the understanding or underpinned knowledge about ESG issues. Some information highlights are obtained based on the responses to these ESG questions, which are divided into three groups of indicators according to the environmental, social, and governance pillars.

The social pillar includes indicators regarding gender, especially the involvement of women in managing and running daily business operations, training for employees, and the educational background of employees. The results of the questionnaire show that 88% of MSME employees have an education or at least attended school. The involvement of women in MSMEs is also quite significant. Around 64% of the business owners are women, including those in the management of MSME businesses. Most of these women are also involved as the leading managers of the business.

The governance pillar consists of indicators of MSME activities related to governance, managerial practices, audit implementation, compensation enforcement, and investment. The results for these questions show that over 50% of MSMEs have implemented a business strategy by setting business targets and monitoring performance indicators. About 89% of the MSMEs use fixed assets such as machinery, vehicles, etc. Moreover, of all respondents, only 9% use technology licensed by foreign companies, and only 2% of businesses have their financial statements examined and certified by external auditors.

Last but not least is the environmental pillar. Within this pillar, indicators of ESG activity consist of questions regarding green management, environmental awareness, and green measurement. The tabulation results show that most of these MSME actors have a basic understanding of environmental issues. About 70% of respondents agree with environmental issues and climate change, including they are required to be responsible for these environmental issues.

Although these MSMEs do not have a target for energy consumption or emissions, 71% of the respondents understand that their activities emit CO<sub>2</sub>. Hence, they understand that business activities consume energy. In fact, more than 80% of them responded that their businesses pay attention to measuring and improving machinery and equipment. These actions include considering the measurement to reduce waste, working towards recycling, focusing on waste management, and other pollution controls.

### DISCUSSION

The MSME business sector contributes significantly to the country's economy. This sector significantly impacts green growth and sustainability issues (Putri & Ros Bangun, 2023). Therefore, the successful implementation of ESG can only be realized by paying more attention to this sector. The effectiveness of economic transformation toward sustainability will then only occur with MSMEs' participation (Bielawska, 2022). Previous literature on ESG concepts among MSMEs still provides mixed results. Therefore, early identification of the understanding of the ESG concept among MSME actors is essential.

Based on the data, MSME actors have a diverse understanding of environmental, social, and business governance issues. MSMEs have a basic understanding of environmental issues but require knowledge to apply them systematically and holistically. Generally, MSMEs apply the ESG concept only to elements that they think will benefit their business. This is the reason that not all indicators in the questionnaire received similar responses.

On the social pillar, most respondents have involved women in the day-to-day management of the business. The involvement of women in this small business is significant, especially as business managers. Regarding staff skills development, most MSMEs do not apply special training focused on improving their skills. However, their employees generally possess an educational background, both formal and non-formal. Therefore, on the social pillar, many MSMEs have already implemented this concept even though it varies and unsystematically. This condition is in line with the study from Bielawska (2022) that small companies generally do not apply social responsibility issues in a systemic and integrated way but tend to apply them only from certain elements, factors, or circumstances.

Furthermore, in responses to the governance indicators, it can be identified that many respondents agree they have a business strategy. However, it is unavailable in the written statement. They also monitor the business performance but do not integrate this activity into the business strategy. Most of them also stated that they do not have business strategies integrated with the business model, such as a sales target strategy supported by promotion targets, product quality certification standards, and performance bonuses for managers. Whereas good ESG performance will be identified in its implementation and integration with the business model. These findings align with previous research which states that small companies typically do not connect social responsibility with their business strategy, so the practice does not benefit the society (Bielawska, 2022).

Almost all MSMEs, or around 89% of respondents, running businesses stated that their business employs fixed assets such as machinery and vehicles. They acquire these fixed assets through new procurement or used purchases. However, only some of these MSMEs consider their impact on the environment. Only about 23% agreed that they also consider environmentally friendly assets when procuring them. In addition, the role of auditors in verifying financial statements is still found insignificantly within MSMEs in the region.

In the environmental pillar block of indicators, the responses show that MSME actors have considered or at least are aware

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of issues related to the environment or global climate change. However, this is only limited to basic discourse, and no one has controlled energy consumption on their business premises. Although most are identified as having monitoring energy use or consumption, there are still limited efforts to certify the environment as part of business requirements. They generally do not recognize external audits for energy consumption either.

From the data obtained, more than 70% of MSME actors understand that their business activities emit CO<sub>2</sub>. However, these respondents do not modify their activities in reducing energy consumption or CO<sub>2</sub> emission targets. In addition, most respondents also do not try to improve energy efficiency or use energy from renewable sources. However, when it comes to green management, many respondents are already knowledgeable about waste management. More than 80% of respondents stated that they implement efforts to minimize, recycle, and treat waste and other pollution controls.

### V. CONCLUSIONS

This study aims to identify the understanding of MSME actors in ESG practices. The results on ESG identification in MSMEs show that respondents are required to understand sustainability practices holistically. Although most MSME actors understand the importance of financial information, most of them necessitate exploring the importance of non-financial information, such as ESG, for their business sustainability. This is in line with what Ferrazzi and Tueske (2022) stated: there is a significant lag that affects limitations in ESG practices and disclosures made by MSMEs. Thus, this study provides additional evidence to support understanding of ESG practice as a basis for non-financial information in the management of MSMEs.

Moreover, the results of this study can provide additional insights for MSMEs regarding global issues that impact business. The findings will also provide input for regulators, such as professional associations or the government. This aligns with previous studies that link ESG with the investment and funding activities of MSMEs. Government involvement is essential, as part of the stakeholders, in achieving the effectiveness of green financing schemes (Ezuma & Matthew, 2022; W. Zhu et al., 2024). Furthermore, improving the understanding of ESG practices is the responsibility of all parties. It demands at least transformational leadership to implement ESG in MSMEs (J. Zhu & Huang, 2023).

Meanwhile, this research is limited to MSME actors in certain Cibinong District, Bogor Regency areas, namely sub-districts of Nanggung Mekar, Pabuaran Mekar, and Pondok Rajeg. Hence, future research is suggested to consider a broader area with more respondents to gain a better picture as a basis for analyzing the implementation of ESG in MSMEs. This research is also limited only to identifying ESG issues with a descriptive analysis approach, thus future research suggested to explore more with the empirical approach.

In summary, ESG-related issues in MSMEs are an area that still requires further investigation. Future research can identify ESG practices in a broader and more diverse context to achieve better conclusions. Recently, ESG practices have also become more essential, and there is plenty of room to improve the understanding of sustainability issues for susceptible business groups (Tan et al., 2023). In line with this, ESG practices are seen as beneficial and vital not only in large companies but also in small industries.

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### Annex

#### List of Questions

Indicators	Questions	Yes (%)	No (%)
<b>Social</b>			
1G	The composition of company owners is female.	64	36
2G	The percentage of female owners is below 50 percent.	51	49
3G	The main managers of your business are women.	56	44
4G	Your business has female employees.	24	76
5T	Your business conducts training for employees.	23	77
6E	Employees who work for your business have attended school or have an education.	88	12
<b>Governance</b>			
1C	Your business has a business strategy.	68	32
2C	Your business has a written business strategy.	21	79
3C	Your company was legally registered when it started its operations.	32	68
4C	Business owners or managers often meet with suppliers.	45	55
5M	Your business has performance indicators that are monitored.	59	41
6M	Your business has or sets production or sales targets.	51	49
7M	Your business has a promotion ladder for non-managers.	30	70
8A	Your business has a nationally/internationally recognized quality certification.	10	90
9A	The financial statements of the business are examined and certified by external auditors.	2	98
10CO	Your business has performance bonuses for its managers.	33	67
11IN	Your business uses technology licensed from foreign-owned companies (excluding software)?	9	81
12IN	Your business purchases new or used fixed assets (such as machinery, vehicles, etc.).	89	11
13IN	Your business purchases new or used fixed assets (such as machinery, vehicles, etc.) that are environmentally friendly.	23	77
<b>Environment</b>			
1GR	Your business has strategic objectives that mention environmental issues or climate change.	79	21
2GR	The business manager is responsible for reporting environmental issues to the manager above him or the owner.	74	26
3GR	You have a customer who requires environmental certification as a requirement for doing business.	13	87
4EN	Your business monitors its energy consumption.	77	23
5EN	Your business has an external audit for energy consumption.	2	98
6EN	Over the past three years, your business has emitted CO <sub>2</sub> .	71	29
7EN	Your business monitors CO <sub>2</sub> emissions along the supply chain.	4	96
8EN	Your business has an energy consumption target.	21	79
9EN	Your business has a CO <sub>2</sub> emissions target.	5	95
10EN	Your business takes steps to improve energy efficiency.	39	61
11EN	Your business uses energy from renewable sources.	29	71
12GM	Your business has taken steps: there is more climate-friendly energy generation on site.	64	36
13GM	Your business has measures in place: there is upgrading machinery and equipment.	86	14



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14GM	Your business has measures in place: there is minimizing waste, recycling, and managing waste.	89	11
15GM	Your business has measures in place: there are other pollution control measures.	88	12

**Source:** Modified questions from Ferrazzi and Tueske (2022).

Notes:

G: Gender

T: Training

E: Education

C: Corporate governance M : Management Activities A : Audit

CO: Compensation IN : Innovation

GR: Green management

EN: Environmental awareness GM : Green measures