



APPLICATION OF GREEN ACCOUNTING AS A STRATEGY TO IMPROVE PROFITABILITY IN BLACK PEARL CHARCOAL MSMEs

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ABSTRACT

This study aims to examine the implementation of green accounting as a strategy to increase profitability in Arang Mutiara Hitam, a micro-enterprise engaged in coconut shell charcoal production. The research uses a descriptive qualitative method with data collected through interviews, observation, and documentation. The findings indicate that the business owner has practiced environmental and social responsibility by providing compensation to surrounding communities, yet environmental costs have not been systematically recorded in financial reports. As a result, recurring environmental expenditures are not identified as factors affecting business profit, making it difficult for the owner to conduct comprehensive financial evaluations. These findings highlight the importance of green accounting to improve transparency, cost efficiency, and long-term profitability. The study also supports existing theories and prior research asserting that environmental accounting promotes sustainability and strengthens the financial performance of micro-enterprises.

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1. INTRODUCTION

Indonesia's economic growth over the past few decades has shown a significant dependence on the role of Micro, Small, and Medium Enterprises (MSMEs). According to (Statistics, 2024), MSMEs contribute over 60% to the national Gross Domestic Product (GDP) and employ approximately 97% of the workforce. This central role of MSMEs makes them the main driving force in promoting inclusive and sustainable economic growth, especially in areas not fully touched by large industries. However, as attention to issues of climate change, environmental pollution, and sustainability increases, there are demands for MSME actors to not only focus on economic profit alone, but also to begin considering the impact of their business operations on the environment.

MSMEs, despite being small-scale, make a significant contribution to environmental degradation if managed without considering ecological aspects. The use of environmentally unfriendly fuels, production processes that generate hazardous waste, and ignorance about the importance of waste management are challenges that need to be addressed. One relevant approach to addressing these challenges is green accounting or environmental accounting. The application of green accounting not only supports environmental sustainability but is also related to financial performance. By integrating environmental accounting perspectives, companies can make wiser decisions, balancing profit considerations with social and ecological responsibility.

The main problem in this research is that green accounting has not yet been implemented by coconut shell burning businesses, so environmental costs are not recorded and pollution is not controlled. This condition risks

reducing business profits in the long run due to potential conflicts with residents and sanctions from the government. In fact, Law No. 32 of 2009 concerning Environmental Protection and Management emphasizes that every business actor, including MSMEs, is obliged to maintain environmental sustainability and provide accurate information regarding the environmental impact of their business, and Law No. 40 of 2007 concerning Limited Liability Companies and Government Regulation No. 47 of 2012 concerning Social and Environmental Responsibility, companies involved in the utilization of natural resources are required to carry out social and environmental responsibility. If green accounting is not implemented, the risk of financial and legal losses will continue to increase. Therefore, integrating environmental accounting perspectives into financial performance analysis is becoming increasingly relevant. This approach allows companies to make more mature decisions, where financial considerations are balanced with environmental responsibility. By implementing environmental accounting, companies can more effectively measure and monitor environmental impacts (Harahap et al., 2025). Green accounting is a form of integrating environmental aspects into the financial recording and reporting system, with the aim of identifying, analyzing, and efficiently managing the costs arising from environmental impacts. According to Hansen and Mowen (2009), green accounting includes four categories of environmental costs: prevention costs, detection costs, internal failure costs, and external failure costs. These categories help business actors identify environmental spending items and provide data that can be used in strategic decision-making (Latifah & Soewarno, 2023).

Previous studies have shown that implementing green accounting is not only a form of environmental responsibility but can also have a positive impact on company profitability (Latifah & Soewarno, 2023). In the journal "The Environmental Accounting Strategy and Waste Management to Achieve MSME's Sustainability Performance," it was proven that systematically recording environmental costs helps MSMEs streamline operational costs, increase production efficiency, and reduce waste, ultimately leading to increased profits. Additionally, research by (Niandari & Handayani, 2023) in their journal also revealed that companies consistently implementing green accounting are able to reduce external costs and increase consumer trust, thereby contributing to an increase in company profits. Research by (Yosiska et al., 2024) showed that the implementation of green accounting not only protects the environment but can also increase business profits. By systematically recording and managing environmental costs, SMEs can reduce waste, avoid risks, and even generate additional revenue. This theory strengthens the argument that good environmental cost accounting and management is not merely an ethical obligation, but a management strategy that directly impacts a company's profits.

UMKM Arang Mutiara Hitam is a real example of that challenge. This business operates in the field of coconut shell charcoal production, utilizing local organic waste through the pyrolysis method in closed drums. This process is indeed more environmentally friendly than open burning methods, but it still produces waste in the form of thick smoke, charcoal dust, and other residues that can pollute the air and cause disturbances to nearby communities. Initially, the burning location was on the roadside and near residential areas, which led to complaints from residents due to the fairly intense air pollution. In response to these complaints, the business owner decided to move the burning location to a palm oil plantation area further away from residential areas.

However, this decision is not without cost consequences. Relocating the facility creates additional burdens such as new land rent, construction of incineration facilities, and transportation costs for raw materials and finished products. Although the burning location has been moved away, the impact of the smoke is still felt by the surrounding community. To maintain good social relations, MSME actors regularly allocate annual costs in the form of food assistance to local residents, especially before major religious holidays like Eid al-Fitr or large village cultural events. Unfortunately, all these expenses have not yet been recorded separately in the financial statements and are still considered informal or "social expenses." The absence of this recording leads to inefficiency in financial management and makes it difficult for business owners to evaluate the actual environmental costs borne by the business. These costs, if identified and categorized within the framework of green accounting, actually fall into the category of external and internal failure costs as stated by Hansen and Mowen. In practice, this mixing of production costs and environmental costs causes businesses to lose their ability to control cost burdens, which ultimately impacts the company's profitability. Here is the profitability data for the past five years of Black Pearl Charcoal MSMEs:

Years	Profit
2020	115.000.000
2021	125.000.000
2022	139.000.000
2023	95.000.000
2024	90.000.000

The profitability data for the past five years of UMKM Arang Mutiara Hitam shows that this business generally has the potential to achieve a profit target of Rp100 million to Rp139 million per year. In 2020, the profit achieved was Rp115 million, in 2021 it increased to Rp125 million, and in 2022 it reached its peak at Rp139 million. However, after the burning location was moved in early 2023 and additional costs such as land

rent, social assistance, and logistics began to be allocated, profits started to decline. In 2023, profits were only Rp 95 million and decreased again in 2024 to Rp 90 million. This decline indicates that there are environmental cost burdens that are beginning to erode profitability and need to be managed accountably immediately.

Business owners are aware that these expenses are increasing year after year, but they lack written data or cost analysis that can be used to review efficiency or explore alternative strategies. This highlights the importance of implementing green accounting, not only for regulatory compliance but also as a strategy for long-term profitability improvement through efficiency and environmental risk management. Consistent with the findings of Hapsari et al. (2021), environmental cost accounting and reporting can reduce long-term operational costs and improve strategic decision-making, leading to more effective support for sustainable profitability.

From a regulatory perspective, Law No. 32 of 2009 concerning Environmental Protection and Management stipulates that every business actor, including MSMEs, is obliged to maintain environmental sustainability and provide accurate information regarding the environmental impact of their business. Articles 67 and 68 of the law emphasize the importance of social responsibility and transparency in environmental management. Although MSMEs are not required to prepare environmental impact assessment documents like large companies, they are still subject to regulations that encourage reporting and controlling environmental impacts. The application of green accounting in this context can be an important tool for effectively fulfilling legal and social responsibilities. (Law, 2024)

In addition, other supporting legal bases are Law No. 40 of 2007 concerning Limited Liability Companies and Government Regulation No. 47 of 2012 concerning Social and Environmental Responsibility, which require business entities to budget and report social responsibility funds. Although the scale of MSMEs is not the main subject of this regulation, its principles remain relevant and will guide future policy development. LHK Regulation No. P.1/MENLHK/SETJEN/OTL.0/1/2017 also provides technical guidelines for the preparation of Environmental Protection and Management Plans (RPPLH), which can serve as a reference for MSME actors in developing data-driven environmental strategies.

Based on the above explanation, it can be concluded that the main challenge faced by Black Pearl Charcoal MSMEs is the lack of a recording system capable of separating and managing environmental costs accountably and in accordance with applicable accounting principles. Based on initial interview and observation results, it was found that business owners do not yet have accounting records that specifically include environmental cost accounting, and do not yet understand the importance of environmental reports in supporting business sustainability. This indicates that there is no valid and regulation-compliant recording system that can fully depict the impact of operational activities on the surrounding environment.

Green accounting offers a strategic solution for identifying, measuring, and controlling the cost burdens associated with environmental impact, while also serving as a basis for efficient and sustainable decision-making. When environmental costs are systematically recorded, businesses can evaluate the effectiveness of social and environmental policies, formulate efficiency strategies, and enhance their business reputation in the eyes of the public and consumers. Based on existing results and theories, green accounting is not only a sustainability solution but also a tangible strategy for increasing profitability because it can minimize waste, avoid legal and social risks, and create added value through business efficiency and transparency (Bela & Sisdianto, 2024). Therefore, this study aims to examine the application of green accounting in the Black Pearl Charcoal MSME as a strategy for increasing profitability. This study employs a descriptive qualitative approach to explore environmental cost accounting practices, business owners' perceptions of the importance of environmental reporting, and the impact of such accounting on financial management and business sustainability. Thus, this research is expected to contribute theoretically and practically to driving the transformation of MSMEs towards business practices that are not only financially profitable but also socially and environmentally responsible.

2. RESEARCH METHODS

Green Accounting (Environmental Accounting)

Green accounting, or environmental accounting, is an accounting approach that aims to integrate environmental dimensions into a company's financial recording and reporting system. This approach emphasizes the importance of recognizing, measuring, and reporting the costs incurred due to the impact of the company's activities on the environment (Dita & Ervina, 2021). According to Hansen and Mowen (2009), environmental accounting is classified into four main cost categories, namely: a. Prevention costs, which aim to avoid environmental damage from the outset, such as investments in clean technology; b. Detection costs, which include the costs of monitoring and measuring pollution; c. Internal failure costs, which are costs arising from environmental damage occurring within the company; and d. External failure costs, which are costs incurred to repair the environmental impact that has reached the community or ecosystems outside the company.

This grouping provides a systematic framework for business owners, including MSMEs, to identify and manage environmental-related expenses. Besides improving operational efficiency, this approach also facilitates more accurate decision-making in achieving financial and ecological sustainability (Don R. Hansen & Maryanne M. Mowen, 2009). Another study by (Kamilah et al., 2024) emphasizes that implementing green accounting in small businesses like MSMEs can help business owners identify the sources of environmental costs in their production processes, and promote the creation of more efficient and sustainable business strategies. By systematically understanding and recording environmental costs, MSMEs have a stronger foundation for improving profitability and avoiding environmental risks that could negatively impact their reputation and finances.

Meanwhile, (Apriani et al., 2023) defines environmental accounting as an approach that aims to incorporate all costs related to environmental impact into corporate accounting practices. In other words, the company not only records operational and production costs but also accounts for the ecological consequences of its business activities. This encourages companies to be more aware of the importance of resource efficiency and social responsibility in achieving long-term sustainability. Thus, green accounting becomes a strategic tool in achieving a balance between increasing profitability and environmental protection, particularly for MSMEs who have historically tended to neglect environmental aspects in their business practices.

Profitability

Profitability is an indicator that shows a company's ability to generate profit from all its operational activities. On the SME scale, profitability can be measured through simple ratios such as net profit margin, operational cost efficiency, or consistent net revenue growth. Profitability is influenced by efficiency and cost management, which in the context of MSMEs can be achieved through the application of green accounting to reduce environmental costs and sustainably improve financial performance (Imisar & Harahap, 2022). In the context of green accounting, accurate environmental cost recording can help MSME actors conduct cost-benefit analysis of activities that impact the environment, while also reducing unnecessary expenses. Thus, the implementation of green accounting has the potential to strengthen profitability through environmental management efficiency (Garcia et al., 2002).

The Relationship between Green Accounting and Profitability

Green accounting and profitability are not contradictory, but rather complementary. The application of green accounting allows businesses to identify cost waste due to neglecting environmental impacts and adjust operational strategies to improve efficiency. Green accounting is the process of recording and reporting environmental costs arising from a company's operational activities. This concept aims to internalize environmental impacts into the financial system, so that environmental costs such as waste management, energy use, and social compensation can be reflected accountably in financial statements (Indah Kusumawardhani, 2022). By systematically recording environmental costs, companies can achieve more effective cost control and make strategic decisions focused on sustainability. According to (Nabila Febriyana et al., 2023), although the implementation of green accounting among MSMEs is still limited, recording environmental costs can actually have a positive impact on business sustainability. One example is the construction of a Wastewater Treatment Plant (WWTP), which requires a significant initial investment but can reduce the long-term risks of pollution, social conflict, and legal sanctions that could harm profitability. Additionally, well-managed waste can even be reused to create economically valuable products.

Meanwhile, (Jaenudin et al., 2025) showed that MSME actors, particularly in the coconut shell charcoal industry sector, have demonstrated environmental awareness by separating waste and providing compensation to nearby residents. However, there is no recording of environmental costs in the financial statements yet. In fact, if these costs are recorded and managed accounting-wise, it will be easier for MSME actors to control expenses, estimate social costs, and design more measurable business efficiency strategies. This directly or indirectly impacts profitability.

Green accounting recording has a close relationship with company profitability. Although it requires an initial investment, this strategy can reduce long-term risks, strengthen social relationships with the surrounding environment, improve operational efficiency, and build a responsible and sustainable business image. Therefore, green accounting is not only relevant from an environmental perspective, but also as a financial management strategy that supports increased business profits. (Sekar et al., 2024)

Regulatory Basis for Green Accounting

The implementation of green accounting in Indonesia is not specifically regulated in a single law, but its principles are reflected in several important regulations relevant to environmental management obligations and corporate social responsibility (Nabila Febriyana et al., 2023).

1. Law No. 32 of 2009 concerning Environmental Protection and Management (UUPPLH): Articles 67 and 68 require every person and business actor to maintain environmental sustainability and provide accurate information regarding environmental impacts. Green accounting serves as a tool for recording and reporting this information.
2. Law No. 40 of 2007 on Limited Liability Companies and Government Regulation No. 47 of 2012 on Social and Environmental Responsibility: Stipulates that every business entity is required to budget and report costs for social and environmental responsibility activities, which are accounting-wise part of the relevant environmental costs in green accounting.
3. Regulation of the Ministry of Environment and Forestry No. P.1/MENLHK/SETJEN/OTL.0/1/2017: Regulates guidelines for preparing Environmental Protection and Management Plan (RPPLH) documents, which encourages efforts to have a system for documenting and managing environmental impacts.
4. ISO 14001 (Environmental Management System): Although voluntary, this standard supports green accounting principles such as measuring, controlling, and reporting environmental impacts.

This research uses a descriptive qualitative approach to analyze the implementation of green accounting as a strategy to improve profitability at the Black Pearl Charcoal MSME. Data was obtained through semi-structured in-depth interviews with business owners, aimed at gathering information related to environmental awareness, record-keeping, and cost management. The data was analyzed thematically to identify patterns of practice, constraints, and the potential for implementing green accounting to support cost efficiency and improve profitability. This approach was chosen because it can provide a comprehensive overview of business actors' experiences and perspectives directly.

3. RESULT AND ANALYSIS

Results

Based on interviews conducted with the owner of the Black Pearl Charcoal MSME, it was found that this business demonstrates concern for the surrounding environment, although it has not formally implemented a green accounting system. The business owners admit that the coconut shell burning activity they engage in does have an environmental impact, particularly the smoke and odor that can bother nearby residents. As a form of social responsibility and awareness of the impact, business owners regularly provide assistance and compensation to the surrounding community, especially during certain moments such as Eid al-Fitr or when there are major events held in the village. The assistance provided is social in nature, such as distributing food staples or cash, and is usually done once a year or as needed by the surrounding community. Although this form of social responsibility has been consistently implemented, it has not yet been officially recorded in the business's financial statements. This indicates that environmental costs are already present and incurred regularly, but have not yet been integrated into their business accounting systems.

The interview also revealed that the relocation of the coconut shell burning site carried out in the last two years has also affected the profitability of the business. Previously, when still at the old location, the business's profits could reach around Rp150 million per year, but after moving, profits experienced a significant decline. This was due to additional expenses for adapting to the new location, as well as an increase in the amount of compensation that had to be paid to the community around the new location. The business owner stated that in the last two years, profits have only been around Rp95 million in 2023, and have decreased to approximately Rp90 million in 2024. This profit decline is felt to be quite burdensome, as the business's actual profit target is in the range of Rp100 million to Rp150 million per year. However, due to the lack of official records of environmental and social costs incurred, businesses find it difficult to conduct a comprehensive financial evaluation.

Over the past five years, Black Pearl Charcoal MSMEs have experienced quite noticeable fluctuations in profits. In 2020 and 2021, profits remained stable at Rp150 million, then began to decline in 2022 to Rp120 million, eventually dropping more sharply in 2023 and 2024 as mentioned earlier. This decline is not only due to relocation and increased social costs, but also because there is no accounting system yet capable of recording environmental expenditures in detail. The business owner admits that most costs are only recorded as far as raw material purchases, production costs, and general operating expenses are concerned. Environmental costs such as compensating residents, adjusting incineration sites, or maintaining the surrounding area are not included in

the accounting records. As a result, the financial statements do not reflect the true condition of the business, and financial strategies are difficult to formulate accurately.

From the perspective of knowledge and understanding of green accounting, business actors are not yet deeply familiar with the concept. However, after being explained, business owners responded positively and considered that recording environmental costs would be very beneficial for the sustainability of their businesses. He stated that if environmental costs such as compensation and assistance to residents could be recorded neatly, he could evaluate the annual expenditure more accurately and design financial efficiency strategies without reducing good relations with the surrounding community. He also realized that transparency in record-keeping would be easier if the business ever expanded and needed access to financing from financial institutions or cooperation with other partners.

Discussion

The results of this study indicate that Black Pearl Charcoal MSMEs have not formally implemented green accounting in their business management. Nevertheless, business operators have demonstrated social and environmental concern by providing compensation to the surrounding community for the impact of coconut shell burning activities. This compensation is usually provided in the form of basic necessities or cash, especially during religious holidays or community events. However, these socio-environmental costs are not systematically recorded in financial statements, so they are not visible as a component of the actual cost of doing business.

This finding indicates that the accounting system currently in use is still conventional, meaning it only records general production costs such as raw materials, labor, and operating expenses. As a result, the actual environmental costs routinely incurred are not identified as factors influencing profitability. In fact, over the past two years, the business has experienced a significant decline in profits, from Rp1.50 million to Rp90 million per year. This decline is directly related to the relocation of production sites and the increase in social compensation not recorded in accounting.

Theoretically, this condition illustrates the importance of implementing green accounting, as stated by Hansen and Mowen (2007), who explain that recording environmental costs allows companies or MSMEs to control, evaluate, and measure all activities that impact the environment. Without such records, cost burdens cannot be analyzed accurately, leading businesses to miss opportunities for comprehensive efficiency strategies and profit evaluation.

Furthermore, the concept of green accounting also serves as a basis for decision-making that supports business sustainability. Environmental cost accounting provides important information that can be used to adjust production strategies, waste management, and long-term financial planning. By recording expenses such as compensation, maintenance of the burning site, and site adjustments, MSMEs can understand the contribution of each cost component to profit. This aligns with the opinion of (Nabila Febriyana et al., 2023) which states that the implementation of green accounting helps MSMEs manage environmental costs more accurately and efficiently.

The findings in this study also support the results of a study by (Latifah & Soewarno, 2023) which states that recording environmental costs through environmental accounting strategies can simultaneously improve the sustainability performance and profitability of MSMEs. This recording not only impacts the financial aspect but also builds a positive image of the business in the eyes of the community and business partners. In the context of Black Pearl Charcoal MSMEs, recording environmental costs will provide transparency over expenses that have been hidden, while also opening opportunities for evaluation and budget adjustments to stabilize business profits.

Additionally, green accounting is also relevant in the context of Islamic values. As explained by (Erianto et al., 2023), environmental accounting aligns with the principles of *maqashid syariah*, which emphasize the protection of life, the environment, and the sustainability of life. Business owners who record and manage environmental costs are not only fulfilling their social responsibility but also meeting their moral obligation to safeguard the public good. Therefore, implementing green accounting in MSMEs based on ethical values such as Black Pearl Charcoal will strengthen business integrity and sustainability.

The argumentation from this finding also reinforces the idea that business sustainability is not solely determined by the amount of profit earned, but also by how well business owners are able to manage the environmental and social impacts of their production activities. Without good management, environmental costs can grow and go undetected, gradually reducing business profits. By transparently recording all expenses, MSME actors have a strong foundation for evaluating and improving their financial performance in the long term.

From a policy perspective, the lack of mandatory regulations regarding the recording of green accounting in MSMEs is one of the reasons for the limited implementation of this system. In fact, according to Government Regulation No. 47 of 2012, which is derived from Law on Limited Liability Companies No. 40 of 2007, every business actor has social and environmental responsibility. Therefore, although not mandatory, the implementation of green accounting needs to be encouraged so that MSMEs not only focus on profit, but also on their responsibility towards the environment and society.

In general, this discussion shows that a financial accounting system that does not include environmental costs will make it difficult for business owners to understand the true condition of their business. UMKM Arang Mutiara Hitam has incurred social costs every year, but because they are not recorded, their contribution to the decline in profits is unknown. This makes it impossible to formulate business strategies optimally, and potential losses cannot be prevented.

Conversely, by implementing green accounting, businesses can systematically record all environmental expenditures, making financial statements more representative and valid. The data generated will also be useful in developing efficiency strategies, reallocating budgets, and maintaining profits according to targets. With a profit target of Rp100 million–Rp150 million per year, cost management becomes crucial to maintain business sustainability.

Thus, this discussion concludes that the implementation of green accounting in the Black Pearl Charcoal MSME is an urgent and strategic need. Besides helping with transparent and accountable financial record-keeping, this system also serves as a tool to improve spending efficiency, optimize cost structures, and support business sustainability from economic, social, and environmental perspectives. The application of green accounting is not only a solution for environmental conservation, but also a concrete strategy for sustainably increasing the profitability of micro-enterprises.

4. CONCLUSION

This research concludes that the Black Pearl Charcoal MSMEs have fulfilled their environmental social responsibility by providing compensation to the surrounding community. However, the lack of formal environmental cost accounting indicates that the implementation of green accounting has not been done systematically. The practices that are already in place are still informal and not documented in the business's financial statements. As a result of not implementing green accounting, businesses are having difficulty conducting a comprehensive financial evaluation. Environmental costs such as social compensation and adapting business premises, which are constantly increasing, are not reflected in the accounting records, leading to a decline in profitability that is not clearly identified. This hinders the cost control and operational efficiency strategies that should be implemented. The findings of this study align with the theory of Hansen and Mowen (2007), which emphasizes the importance of environmental cost accounting in business decision-making. Therefore, the implementation of green accounting becomes an important strategy for MSMEs in maintaining a balance between profit and environmental responsibility.

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