

THE ENVIRONMENTAL MANAGEMENT ACCOUNTING ANALYSIS TO ENCOURAGE PRODUCT INNOVATION IN THE FABRIC INDUSTRY

Mochamad Fahru Komarudin
Universitas Bina Bangsa, Indonesia

ARTICLE INFO

Keywords:

Environmental Management Accounting, Product Innovation, Fabric Industry

ABSTRACT

The purpose of this study is to investigate the effect that implementing environmental management accounting has on the rate of product innovation within the textile manufacturing industry. Through a qualitative research approach, this research involves a descriptive analysis approach. In the industrial district of Cilegon City, primary data collection consisted of interviews with players in the textile industry and professionals engaged in the industry. The study's results reveal that the use of environmental management accounting in the fabric industry has provided a positive impetus to the resulting product innovation. When ecological management accounting is implemented, industrial managers gain a more in-depth understanding of managing production activities. It is particularly beneficial for Knitting, Dyeing, and Finishing managers. Nevertheless, there are restrictions to be seen in certain aspects of the industry's specific environmental cost disclosure in its financial reports. Environmental management accounting encourages innovative concepts for industry players, which stimulates the transformation of waste from industrial processes into valuable innovative products. The findings of this study highlight the significance of incorporating the idea of sustainable accounting into the process of driving innovation in the fabric industry sector. It could positively affect both the economy's growth and the environment's state.

E-mail:
mfahruk@gmail.com

Copyright © 2023 Economic Journal. All rights reserved.
is Licensed under a Creative Commons Attribution-NonCommercial 4.0
International License (CC BY-NC 4.0)

1. INTRODUCTION

The textile industry has been instrumental in the development of the economy on a global scale, making essential contributions to employment, earnings from exports, and overall economic growth. However, the expansion of this industry is frequently accompanied by adverse environmental effects. This is particularly true in the Knitting, Dyeing, and Finishing sectors, where processes such as dyeing and finishing can generate waste harmful to the surrounding environment. Because Cilegon City is one of the major industrial hubs in the surrounding area, the city is confronted with significant difficulties in mitigating the adverse effects of industrial activity on the surrounding environment. In this regard, environmental management accounting has emerged as a potential solution to overcome negative ecological impacts while driving product innovation in the fabric industry, particularly in the Knitting, Dyeing, and finishing sectors. Environmental management accounting is a form of integrated accounting that incorporates traditional accounting concepts with environmental considerations. The result is more comprehensive and accurate information regarding the costs and benefits associated with various business practices.

However, despite the significant potential benefits, there still needs to be more understanding of the extent to which environmental management accounting has been applied in the fabric industry in Cilegon City, particularly in the context of the Knitting, Dyeing, and finishing sectors. Questions about how environmental management accounting can influence product innovation, how waste management can be integrated into accounting practice, and its impact on economic growth and the environment need further investigation. The pollution of the natural environment brought on by the company's production processes is becoming an increasingly urgent problem in today's economy, which is still expanding. The negative impact that these industrial activities have is hugely detrimental, particularly in the form of pollution that is caused by river flow. Industrial waste that is disposed of without adequate management causes river fish to die due to waste contamination. In addition, well water, which is a source of water for residents around the industry, is also contaminated, creating health risks for the local community

The Environmental Management Accounting Analysis To Encourage Product Innovation In The Fabric Industry. Mochamad Fahru Komarudin

(Marizka & Faidati, 2020). This kind of pollution not only affects the environment around the industry but also has long-term impacts, such as rising air temperatures and global warming, which can impact a broader scale.

This phenomenon underscores the imperative of giving due consideration to sustainable practices within the industrial sector and the urgency of implementing robust waste management strategies and more stringent environmental policies. Industries must embrace a conscientious approach toward their production processes and accord utmost importance to environmental preservation as an inherent component of their business activities. Awareness of the negative consequences of environmental pollution should drive changes in how the industry operates towards better sustainability principles. Every industry or company faces challenges to maintain business continuity, especially in the current global economic crisis. To maintain their existence, companies must meet the expectations of various stakeholders, investors, environmentalists, and consumers. Therefore, special attention needs to be paid to creating environmentally friendly products. Demands originating from various parties, especially from environmentalists and consumers, regarding sustainable and environmentally friendly products must be addressed. In its production strategy, companies need to consider the demands of these stakeholders.

According to Rustika's view, as cited by Mardikawati et al. (2014), to maintain business continuity and sustainable development, companies must adopt a business strategy to meet stakeholders' expectations. One strategy that is very relevant in this context is the development of green products and increasing awareness of environmental issues. This action significantly increases the company's added value and competitiveness (Lestari et al., 2020). This view emphasizes integrating environmental aspects into the company's business strategy. Measures such as creating more environmentally friendly products and increasing commitment to environmental issues can help companies meet stakeholders' demands and improve their position in the market competition. In an era of increasing awareness of environmental issues, companies committed to sustainability will have a greater chance of achieving long-term success.

In facing fierce competition in the fabric industry, companies must adopt product innovations and strategies. These efforts are becoming increasingly crucial in following the competitive trends in the market. In making decisions about new strategies and product innovations, companies must consider environmental issues and utilize environmental management accounting to gain a competitive advantage and add value to their products. The research here emphasizes the critical need for environmental management accounting systems. Environmental management accounting is a subset of environmental accounting that provides valuable information for internal and external reporting (EPA, 1995, cited in Indrawati & Rini, 2018). Norsita (2021) cites the opinion of Hansen and Mowen, who argue that a precise definition of environmental costs is necessary before such data can be presented to management. "Environmental costs" refers to expenses incurred now or in the future because of environmental deterioration (Hansen & Mowen, 2018 in Zainab & Burhany, 2020). In this context, when companies report environmental costs in detail, it shows the implementation of environmental management accounting concepts that have the potential to provide benefits in the form of product innovation. As explained by Wahyono (2002) as quoted by Suhaeni (2018), the ability to produce product innovation is a vital competitive resource and is a strategy for building an advantage over competition.

Thus, this study highlights that environmental management accounting can contribute to a company's ability to produce product innovations that bring added value and differentiate them in a highly competitive market. It strongly supports companies considering environmental issues in their business strategy, producing more sustainable products, and staying relevant in a changing market. This study investigates the impact of implementing environmental management accounting on product innovation within the fabric industry, specifically focusing on the Knitting, Dyeing, and finishing sectors in Cilegon City. In the contemporary industrial epoch, companies must direct their attention not only towards economic considerations but also towards assessing and mitigating environmental consequences within their operational framework. The textile industry, particularly the Knitting, Dyeing, and finishing sector, is widely recognized for its substantial contribution to environmental pollution. Therefore, this study aims to explore how integrating environmental management accounting concepts can encourage product innovation amidst the dynamics of this industry. In the fabric industry, particularly in the Knitting, Dyeing, and finishing sectors, production practices can harm the environment, especially with waste and chemicals. The utilization of environmental management accounting enables companies to gain a comprehensive understanding of the ecological consequences associated with each stage of their production process. It encompasses the assessment of environmental expenses that may need to be

accounted for in conventional financial reporting, such as the expenses associated with environmental remediation or waste disposal.

Literature Review

Environment management accounting

Environmental management accounting is a concept that is a bridge between the business world and environmental responsibility. In the hustle and bustle of the complexity of ecological challenges, this concept emerged as a means to bridge the gap between economic growth and environmental protection (Ikhsan, 2009). Although rooted in the broader environmental accounting, environmental management accounting is more than just a series of numbers. Environmental management accounting is a growing branch of the environmental accounting tree. Its primary goal, which points in the same direction as the primary goal of environmental accounting, is to provide a valuable guide for decision-making. Not only focused on recording transactions related to environmental issues, this concept is deeper in tracking sustainable aspects in organizational structure and operations. The process of collecting and analyzing data forms the backbone of environmental management accounting. From the amount of natural resource use to the quantity of waste generated, all of this is processed into insightful information.

Environmental Costs

The gap between short-term economic gains and long-term impacts on the environment is frequently brought to light when conducting environmental cost tracking within a commercial context. According to Tietenberg and Lewis (2016), costs that appear to be hidden in day-to-day operations frequently need to reflect the true impact of these costs on the environment. Although some companies may try to avoid classifying these costs in their financial statements, the fact remains that these environmental costs continue to accumulate and may have a negative impact in the long term. For example, the costs of air pollution or waste generated by factories may not be directly reflected in daily financial reports. However, this pollution can gradually interfere with air and soil quality around the factory, adversely affecting human health and local ecosystems. Therefore, environmental costs are internal costs that are not always reflected in direct financial figures.

Product Innovation

Product innovation refers to the development or significant changes to existing products or the creation of new products with added value or features that are different from those already on the market (Tidd & Bessant, 2018). Product innovation encompasses a wide range of facets, including design, functionality, performance, and quality, in addition to distinctive features that can better satisfy the requirements or desires of consumers. The objective is to develop something innovative and appealing for the market, raise competition among businesses, and offer increased value to consumers (Dodgson et al., 2008). Product innovation can take the form of minor improvements to existing products, such as improvements in quality or efficiency, or it can take the form of significant breakthroughs that change how consumers interact with these products. This innovation can result from careful research and development, a response to changing market trends, and a deep understanding of consumer needs.

Fabric Industry

The term "cloth industry" refers to the section of the economy responsible for producing a wide variety of fabrics and textiles. This sector of the economy encompasses a wide range of processes, from spinning natural or synthetic fibers to manufacturing various fabric products, including apparel, furniture, and other goods for the home. The cloth industry is essential to the economy because cloth is the primary raw material for various consumer products (Harper, 2018). Cotton, silk, linen, denim, and other textiles are just some of the many different kinds of textiles produced by the fabric industry. Additionally, the industry is embracing new technological developments to manufacture superior fabrics in terms of quality, durability, and comfort.

2. METHOD

Types of research

The qualitative research approach combined with descriptive methods was selected for this study. This methodology emphasizes the description and interpretation of the data gathered, intending to describe in greater detail how implementing environmental management accounting contributes to increased product innovation in the Knitting, Dyeing, and Finishing sectors of the fabric industry in Cilegon.

Research Place

PT carried out this study. X Cilegon is a business that is active in the textile industry sector. The type of data being utilized in this research is known as qualitative, consisting of sentences, words, and pictures. A qualitative descriptive analysis technique will be used to analyze these data. During this analysis, the researcher will uncover and describe the significant aspects connected to implementing environmental management accounting and its influence on product innovation within the context of the textile industry. This research is located in Cilegon City, known as the center of the textile industry. Through a qualitative approach, researchers will gain in-depth insight into how environmental management accounting practices are implemented in the fabric industry, especially in the Knitting, Dyeing, and finishing sectors. Therefore,

Data collection technique

This study used various data collection techniques, namely observation, interviews, and documentation. The data analysis method used follows the approach developed by Miles and Huberman. The views of Miles and Huberman, as referred to by Sugiyono (2019), show that data analysis in qualitative research starts from the data collection stage until the data collection stage is complete. Sources of data in this study are informants. According to Moleong (2015), an informant is an individual who provides information regarding the situation, context, and research background and has a deep understanding of the problem to be studied. In the context of interviews in this study, informants are individuals who have knowledge and direct involvement in the issues that are the focus of the research.

Data collection from informants involved observation, interviewing, and documentation. Researchers can better observe practices and situations in the field thanks to observation. Interviews provide the researcher with the opportunity to obtain an in-depth perspective of the informant on the topic that is being studied. The process of collecting data from documents or records that are relevant to research is called documentation. The data analysis method taken from the Miles and Huberman approach involves a process of continuous data collection and gradual data analysis. It allows the researcher to collect data and decipher patterns, findings, and relationship patterns from the analyzed data. By using this approach, this research has the potential to gain in-depth insight into the application of environmental management accounting in increasing product innovation in the textile industry in the Knitting, Dyeing, and finishing sector in Cilegon City.

3. RESULT AND DISCUSSION

Research result

The author carried out research, the results of which were analyzed, and it was discovered that the application of environmental management accounting in the fabric industry, particularly in the Knitting, Dyeing, and Finishing sectors, is more focused on aspects of waste treatment. This information was found based on the findings of the research. In terms of recording accounting information, companies have made relevant records regarding their environmental practices. Nevertheless, several aspects need attention. In terms of accounting information, the fabric industry has recorded data. This record helps in tracking activities and practices related to environmental management. The company has implemented adequate steps in collecting physical information related to environmental management accounting. Data on the materials and other elements required in the production process have been properly recorded. It indicates awareness in monitoring production practices.

However, limitations were found in terms of recording and collecting financial information related to environmental management accounting. Reporting of environmental costs has yet to be done precisely and in detail. Information about these environmental costs is separate from the financial statements but is included in the financial reports. It shows there is still potential to improve transparency and segregation of environmental costs in financial reports. Cost allocation in the fabric industry in the Knitting, Dyeing, and finishing sector in Cilegon City has been carried out with various strategies focusing on waste control and sustainable product innovation. The industry has taken concrete steps to manage sustainable practices and environmental protection costs. First, costs for inspection of processes and products and operational costs for waste control equipment have been identified and allocated. It shows attention to the production process and efficient waste management. This cost allocation allows companies to understand and control critical aspects of their operations.

Furthermore, the fabric industry also allocates costs for the treatment and disposal of waste generated from processes such as dyeing and dyeing. This step reflects the responsibility towards environmental protection by ensuring that environmental regulations and standards appropriately

The Environmental Management Accounting Analysis To Encourage Product Innovation In The Fabric Industry. Mochamad Fahru Komarudin

manage the waste generated. In addition, the industry has budgeted for the cost of recycling waste materials that can be reused. It demonstrates a commitment to reducing waste and efforts to optimize resource use. By recycling waste materials, the industry not only reduces negative environmental impacts but also reduces production costs. The fabric industry has adopted an innovative approach in their production. The industry can continue developing models, prints, quality, styles, and product designs. Because of this, they can produce goods that are not only of a high quality but also kind to the environment. These efforts not only result in better products but also provide additional value to the industry and differentiate it from others in a highly competitive market.

Discussion result

The Knitting, Dyeing, and Finishing sector of the textile industry in Cilegon City has done an excellent job of incorporating environmental management accounting practices into its operations. However, numerous facets of environmental management still have room for improvement. While the industry has been moving in the right direction, there are some areas where further efforts could be made. Even so, environmental management accounting still needs to cover several aspects fully. One example is reporting environmental costs specifically. While there are attempts to integrate sustainable principles into business practices, more detailed and specific reporting of environmental costs can provide more straightforward and more comprehensive information about the environmental impact of industrial operations.

Furthermore, waste control from the dyeing process also needs more attention. Effective waste management from this process can reduce the negative impact on the environment. Therefore, further steps in controlling and reducing waste from the dyeing process could help the industry achieve higher standards in sustainable practices. However, the industry has been booming, providing adequate information to industry owners. It includes information regarding raw materials and other elements needed in the production process. Thus, industrial owners can have better control over their operational activities. In this context, accurate and timely information drives product innovation.

From a product innovation perspective, the fabric industry in the Knitting, Dyeing, and finishing sectors has performed well. Aspects such as style, design, and product quality have been given priority. Modern production equipment and natural dyes reflect a commitment to environmentally friendly product innovation. This effort supports creating higher-quality products and demonstrates concern for environmental impact throughout the production cycle. Comparison between previous studies conducted by Mulyani et al. (2019) with the results of data analysis from this study in the Knitting, Dyeing, and finishing sector of the fabric industry in Cilegon City showing positive changes in the application of environmental management accounting and a focus on product innovation. The results of this study indicate that the fabric industry has taken more advanced steps in integrating sustainable practices and applying environmental management accounting in its operations.

Previous research involving the Jembar Manah Tofu Factory Industry, Sumedang, shows that environmental management accounting has yet to be fully recognized or utilized to increase product innovation in the industrial context. However, current research on the Fabric Industry of the Knitting, Dyeing, and finishing sector in Cilegon City indicates that this industry has become more aware of the importance of integrating environmental aspects into their business practices. In this research, the cloth industry has taken concrete steps in waste management. Recycling waste into valuable and different works demonstrates a commitment to sustainable practices. Through the development of different product styles and designs,

It demonstrates that the fabric industry in the Knitting, Dyeing, and Finishing sector in Cilegon City has realized the significance of incorporating environmentally friendly practices, the implementation of environmental management accounting, and product development. Because of this step, not only will there be a positive impact on the environment due to improved waste management, but the industry will also be able to produce products with a greater variety and more added value. The comparison between the two studies illustrates positive changes in industry awareness and action towards environmental issues and product innovation. It reflects a shift towards more sustainable business practices and focusing on more excellent added value.

4. CONCLUSION

The application of environmental management accounting has demonstrated its significant role in driving product innovation in the textile industry. By adopting this strategy, the sector has implemented concrete measures to incorporate environmental considerations into business practices. Focusing on the

The Environmental Management Accounting Analysis To Encourage Product Innovation In The Fabric Industry. Mochamad Fahru Komarudin

Knitting, Dyeing, and finishing sector in Cilegon City, this research reveals some critical findings. First, it was found that the industry has effectively allocated costs in environmental management. Processing, operational, and waste control processes have been carefully calculated. However, it should be noted that specific and detailed reporting of environmental costs can still be improved to provide a clearer picture of the financial impact of sustainable practices. The textile industry has been proactive in addressing environmental concerns by, among other things, keeping detailed records and compiling information about how the physical world is being managed. The information pertaining to the number of inputs and outputs of production activities provides a clear understanding of the extent to which environmental management practices have been implemented. The industry can measure the operational efficiency and the environmental impact of production activities because this physical information is recorded and recorded. In terms of product innovation, the fabric industry has achieved good criteria. New product development, feature enhancement, and product evaluation can be continuously improved to achieve higher innovation. In the Knitting, Dyeing, and Finishing sectors of the textile industry in Cilegon City, implementing environmental management accounting has resulted in favorable outcomes for the fabric industry. The business sector has successfully incorporated environmentally responsible practices into its operations, with a particular emphasis on environmental management, waste management, and product innovation. However, further steps in environmental cost reporting and increased product innovation are still achievable. With a more substantial commitment to sustainable practices and ever-evolving innovation, the industry has the potential to set an example in creating high-quality, environmentally friendly, and innovative products in the future.

REFERENCES

- [1] Dodgson, M., Gann, D., & Salter, A. (2008). *The Management Of Technological Innovation: Strategy And Practice*. Oxford University Press.
- [2] Ferreira, A., Moulang, C., & Hendro, B. (2010). Environmental Management Accounting and Innovation: an Exploratory Analysis. *Accounting, Auditing & Accountability Journal*, 23(7), 920–948.
- [3] Indrawati, N. M., & Rini, I. G. A. I. S. (2018). Analisis Penerapan Akuntansi Lingkungan Pada Badan Rumah Sakit Umum Daerah (BRSUD) Tabanan. *KRISNA: Kumpulan Riset Akuntansi*, 9(2), 85–95. <https://doi.org/10.22225/kr.9.2.480.85-95>
- [4] Lestari, E. R., Putri, H. K., Anindita, C., & Laksmiari, M. B. (2020). Pengaruh Green Product (Minuman Ramah Lingkungan), Green Advertising, dan Kepedulian Lingkungan terhadap Green Trust dan Implikasi terhadap Minat Beli. *Jurnal Teknologi Pertanian*, 21(1), 1–10. <https://doi.org/10.21776/ub.jtp.2020.021.01.1>
- [5] Harper, R. (Ed.). (2018). *Textile Economies: Power and Value from the Local to the Transnational*. Bloomsbury Academic.
- [6] Mardikawati, S. I., Widianingsih, L. P., & Magdalena, R. (2014). Evaluasi Penerapan Akuntansi Manajemen Lingkungan pada PT. II. *Jurnal Gema Aktualita*, 3(2), 98-108.
- [7] Marizka, G., & Faidati, N. (2020). Analisis Dampak Lingkungan Aktivitas Produksi Industri Gula Bagi Kesehatan Masyarakat di Desa Tirtonirmolo Kabupaten Bantul Daerah Istimewa Yogyakarta (Studi Kasus PT Madubaru PG-PS Madukismo). *JSPG: Journal of Social Politics and Governance*, 2(2). www.Tribunnews.com
- [8] Moleong, L. J. (2015). *Metodologi Penelitian Kualitatif*. Rosdakarya Pemuda.
- [9] Mulyani, H., Lestari, R., & Nurleli. (2019). Analisis Penerapan Akuntansi Manajemen Lingkungan dalam Meningkatkan Inovasi Produk. *Jurnal Akuntansi Bisnis Dan Ekonomi (JABE)*, 5(2).
- [10] Norsita, M. (2021). Analisis Penerapan Biaya Lingkungan Pengelolaan Limbah Cair Rumah Sakit. *Jurnal Ilmiah Akuntansi Manajemen*, 4(1), 54-64. <https://doi.org/10.35326/jiam.v4i1.1016>
- [11] Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif dan R & D*. Alfabeta.
- [12] Zainab, A., & Burhany, D. I. (2020). Biaya Lingkungan , Kinerja Lingkungan , dan Kinerja Keuangan pada Perusahaan Manufaktur. *Industrial Research Workshop and National Seminar*, 11(1), 992–998.
- [13] Tietenberg, T. H., & Lewis, L. (2016). *Environmental and Natural Resource Economics* (10th ed.). Pearson.
- [13] Tidd, J., & Bessant, J. (2018). *Managing Innovation: Integrating Technological, Market, and Organizational Change*. John Wiley & Sons.