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DIRECT AND INDIRECT RELATIONSHIP OF ENVIRONMENTAL MANAGEMENT ACCOUNTING TO ECONOMIC DEVELOPMENT IN COMPANIES

BY

Mar'a Elthaf Ilahiyah[1], Wahidahwati[2], Lidya Setyawardani[3], Dian Ratnasari Yahya[4]

[1,2,3] Accounting Department, STIESIA
[4] Management Departmnet, STIESIA

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Abstract

The mediating influence of environmental performance on the relationship between environmental management accounting and financial performance. The sample used in this research was 33 companies listed on the Indonesia Stock Exchange for the 2019-2023 period. The data analysis technique used is path analysis and Sobel test with the help of the Statistical Package for Social Sciences (SPSS) 22 program. Results study This show that application accountancy management environment No influence environmental performance and environmental performance do not affect financial performance, so it can be concluded that environmental performance cannot mediate the relationship between environmental management accounting and financial performance

Index Terms- Environmental management accounting, environmental performance, financial performance

INTRODUCTION

Sustainable development contains three aspects, namely ecological, social, and economic. In recent years, the balance between environmental sustainability and economic development has become a global concern (Jones, 2010). With increasing environmental damage, ecological/environmental aspects are becoming an important concern. In this case, environmental management accounting can help management to control environmental risks resulting from company operational activities to support sustainable development. The importance of environmental responsibility is a new paradigm in development. Since it was first formulated in the 1980s, sustainable development has become a development concept used in many countries. The main principle is to build to meet the needs of the present without sacrificing the needs of future generations (Burritt and Lehman, 1995). Such development can be achieved if development activities, apart from pursuing economic interests, also pay attention to social/community and ecological/environmental interests.

The underlying reasons why an organization must care about environmental issues include: many company stakeholders, both internal and external, show an increased interest in the environmental performance of an organization (Alsharari, 2024). The existence of various policies in the environmental sector then became the beginning of the development of a concept that aims to find solutions to fulfill business goals and solve environmental problems, which is called eco-efficiency. This principle studies how organizations can produce more useful goods and services, while simultaneously reducing negative environmental impacts, resource consumption, and costs, through increasing efficiency that comes from improving environmental performance. Environmental Management Accounting is needed by every company to provide information to the company regarding the company's environmental performance. Environmental Management Accounting aims to increase the amount of relevant information for those who need it so that it can be used as an indicator for decision-making.

One component of environmental management that can improve environmental performance is environmental accounting. Environmental accounting, especially environmental management accounting, is useful for management because it can provide physical information regarding inputs (materials, water, energy) and outputs (products, waste, emissions) as well as monetary information regarding all expenditures and savings related to the environment. This information also makes it easier for management to carry out environmental management because

*Corresponding Author: **Mar'a Elthaf Ilahiyah.**

management has sufficient information to control the use of materials, water, and energy, control waste and emissions, as well as control environmental costs. In this case, environmental management accounting (EMA) can help management to improve the company's environmental performance to support sustainable development.

The success of Environmental Management Accounting does not only depend on accuracy in classifying all costs made by the company. However, the ability and accuracy of the company's accounting data can reduce the environmental impacts resulting from the company's activities. To support this hope, it is appropriate to encourage a company to carry out business processes by paying attention to the impacts that will occur from the process. Sustainable development aims to meet current needs without reducing the ability to meet the needs of future generations. With information relating to relevant environmental impacts, it is hoped that it can encourage a business to innovate, because by innovating the company will gain various benefits, not only focusing on the market (externally), but also profits within the company itself (internally).).

In order to achieve going concern and economic development, a company also needs to develop new products (product innovation) and improve existing production processes (process innovation) to reduce resource use which can result in environmental damage caused by company activities (Ferreira et al, 2009). Therefore, innovation is also needed now, not only focusing on the product itself but also focusing on the process and costs involved in producing the item.

Environmental management accounting is basically a development of traditional management accounting with an emphasis on environmental aspects and by paying attention to the flow of data and information physically and monetarily. The lack of accounting research that discusses the application of Environmental Management Accounting is one of the obstacles in this research. Therefore, this research tends to still be in the initial phase or exploratory research. In Indonesia, there is a lot of research on environmental performance and disclosure of environmental performance, however, as previously explained, research on the application of Environmental Management Accounting (EMA) is still very rare and is still in its initial phase. Thus, this research is expected to be a pioneer in analyzing and testing the relationship between environmental management accounting and economic development directly and testing it indirectly through product innovation and process innovation. This research was carried out with a quantitative approach to test the influence of causal relationships between the variables studied. It is hoped that this research contribution will be useful for stakeholders and academics in reviewing current environmental management accounting science.

IDENTIFY, RESEARCH AND COLLECT IDEA

Environmental management accounting for company economic development

Environmental accounting, especially environmental management accounting, is useful for management because it can provide physical information regarding inputs (materials, water, energy) and outputs (products, waste, emissions) as well as monetary information regarding all expenditures and savings related to the environment. This information makes it easier for management to carry out environmental management because management has sufficient information to control the use of materials, water, and energy, control waste and emissions, as well as control environmental costs. Various decisions related to the environment can also be taken with this information, making it possible to improve environmental performance. (Martadinata, 2024) states that one way to protect the environment in the long term is to integrate environmental considerations into the company's accounting system. (Weiss, 1995) states that accounting plays a very important role in managing the relationship between companies and the environment.

Environmentally sound development is a conscious and planned effort to use and manage resources wisely in planned and sustainable development to improve the quality of life. Implementing environmentally sound development and controlling the wise use of natural resources is the main objective of environmental management. It is fully realized that development activities, especially those of a physical nature and related to the use of natural resources, clearly contain the risk of changes in the ecosystem which will then result in impacts, both negative and positive. Therefore, the development activities carried out should not only have a social and economic perspective but also an environmental perspective.

Therefore, the planning and policy-making process by state institutions regarding technological and environmental issues requires a comprehensive understanding from policy-making actors regarding related issues.

This understanding originates from academic knowledge and is strengthened by field data so that it can produce a policy scale based on people in general and ecology in particular. The policy that can be implemented is an environmentally sound development policy which is concerned with efforts to utilize natural resources while maintaining aspects of environmental maintenance and preservation.

The implementation of environmentally friendly development, namely reforestation, planting a thousand trees, and the environmental cleanup movement, seems to be experiencing significant obstacles. This means that the imbalance between what is planted and what is exploited is one of the causes. Even legal regulations are unable to prevent this environmental damage.

For example, Law No. 4 of 1984 which has been ratified with Law No. 23 of 1997 concerning the Environment. UU no. 41 of 1999 concerning Forestry, Law no. 5 of 1990 concerning Conservation of Natural Resources and Ecosystems was not able to arrest big-time timber barons. This law is only capable of arresting and prosecuting small-scale illegal logging workers and foremen. Appropriate economic development also takes into account the need for conservation for bio-

*Corresponding Author: **Mar'a Elthaf Ilahiyah.**

physical survival and there must be peace and equality (justice) in carrying out life together.

Environmental management accounting for economic development through product and company process innovation

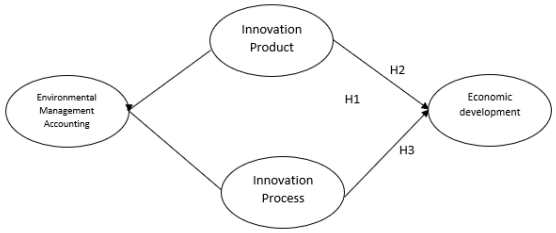
Basically, the main goal of companies implementing a prospective strategy is the market (Ferreira et al., 2009). An innovative prospective strategy will develop new products to achieve its goals in finding new markets. Companies that implement prospective strategies will influence company innovation. This can be seen when a company responds quickly to things or issues related to market needs. Therefore, the greater the pressure that occurs in the market, it is hoped that companies can increase product innovation in order to survive in that market.

Innovation can be defined as the implementation of new systems, policies, programs, and processes that are generated internally and externally (Hamid et al., 2024). What is interesting is that there is a difference between process innovation and product innovation where both complement each other to increase company profitability (Maharani & Maqsudi, 2024). In addition, both product innovation and process innovation can influence the costs incurred by the company. In other words, the use of Environmental Management Accounting may be related to the creation of product innovations and process innovations that can improve a company's competitiveness and position.

The results of Ferreira's research Environmental Management Accounting and Innovation: an exploratory analysis (Maharani & Maqsudi, 2024) say that the application of Environmental Management Accounting has a positive effect on process innovation, but has no effect on product innovation. In research analyzing the influence of the application of Environmental Management Accounting and strategy on company innovation (Sintya, 2024), it was found that the application of Environmental Management Accounting had a positive effect on product innovation and process innovation.

Conceptual Framework

Figure 1 Research Model



Based on the presentation of the grand theory and differences in the results of previous research, the researcher will test it again by proposing the following hypothesis:

H1: There is a positive influence between environmental management accounting on the company's economic development

H2: Product innovation is able to strongly mediate the relationship between the role of environmental management accounting on a company's economic development

H3: Process innovation is able to strongly mediate the relationship between the role of environmental management accounting on a company's economic development

RESEARCH METHODS

Data Types and Sources

Method study This that is quantitative. Study quantitative is something method research based on philosophy positivism , as method scientific or scientific because has fulfil rule scientific in a way concrete or empirical, objective, measurable, rational, as well systematic. Method quantitative aim For test hypothesis that has been determined to be used For research on populations as well as sample specific, data collection with use instrument research, as well nature of data analysis quantitative or statistics.

Study This can classified in type study Explanatory Research . Explanatory research is method purposeful research For explain position the variables studied as well as influence variable One with variable other. Reason main researcher use method explanatory research, namely For test hypothesis proposed, and expected from study This can explain relationships and influence between variable independent and variable existing dependencies. Study This will test influence connection between variable . On research This there are 3 variables that will researched, ie variable independent consists from accountancy management environment as variable independent (X1). Variable innovation product (Z1) and variables process innovation (Z2) as variable mediation, as well economic development (Y) as variable dependent.

RESULTS STUDY

Results test statistics descriptive And hypothesis can seen on table following:

Table 2 Results Test Statistics Descriptive

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Information	Min.	Max.	Mean	Std. Deviation
Accountancy Management Environment	0	1	0.71	0.46
Performance Finance	0.67	23.29	2.38	4.13
Performance Environment	0.03	0.63	0.27	0.14

Table 3 Results Test Hypothesis

	E.P			F.P		
	β	Std. Error	Sig.	β	Std. Error	Sig.
α	0.825	0.014	0,000	1,019	0.037	0,000
AML	0.017	0.016	0.315	- 0.015	0.018	0.451
E.P				0.015	0.060	0.798

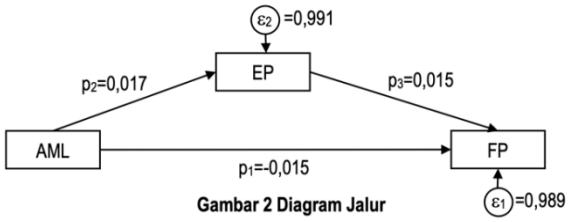
Sig value. t environmental management accounting variable on environmental performance is 0.315 > 0.05. This value indicates that the implementation of AML has no effect on environmental performance, which means that H 1 rejected. Environmental management accounting is a new tool that is effectively used to overcome environmental problems. Through the implementation of AML, companies can produce two types of information (physique And monetary). Information These will then be identified, collected, and

*Corresponding Author: **Mar'a Elthaf Ilahiyah.**

analyzed by management to produce business decisions while still paying attention to environmental issues. Business decisions Which taken management can related to managing the environmental impacts produced by the company. Implementation of AML is expected can become solution Which appropriate for companies to achieve better environmental performance. This turned out to be different from what happened in the sample companies.

Of the 29 sample companies, there are 19 companies that have implemented environmental management accounting for two consecutive years. Based on data analysis, it can be seen that 63% of companies, or 12 out of 19 companies have poor environmental performance. These companies include PT Adhi Karya Tbk., PT Bakrie & Brothers Tbk., PT Elnusa Tbk., PT Garuda Maintenance Facility Aero Asia Tbk., PT Indo Tambangraya Megah Tbk., PT Kalbe Farma Tbk., PT Perusahaan Gas Negara Tbk. , PT PP Tbk., PT Semen Indonesia Tbk., PT Unilever Indonesia Tbk., PT Waskita Karya Tbk., and PT Wijaya Karya Tbk. The company with the highest GRI index or the best environmental performance was obtained by PT Solusi Bangun Indonesia Tbk., where the company only implemented environmental management accounting in 2018. Based on these data, the implementation of AML in the sample companies had no effect on performance. environment produced by the company.

In the sample companies, there is still little information related to the environment produced. The most frequently generated information is information related to the amount of energy and water used, energy reduction, waste produced, and compliance with existing regulations. There is still much information related to the environment that has not been reported. The lack of information presented will have an impact on business decisions made by management because management only has little information to use as a basis for making policies related to environmental management. The information produced will also have an impact on the size of the GRI index obtained by the company. It is known that 19 of the 29 sample companies have implemented environmental management accounting (have ISO 14001 certificate), but 12 of them actually have poor environmental performance. This is due to the lack of information produced by the company, so the GRI index obtained is small and its environmental performance is considered poor. This results in the results of this study being inconsistent with the research of Phan et al. (2017), Solovida and Latan (2017), and Latan et al. (2018), because it produces a relationship that has no effect.



Gambar 2 Diagram Jalur

Environmental performance cannot mediate the relationship between environmental management accounting and financial performance, because there are other performances or other actions that are able to mediate environmental management accounting and financial performance, which were not tested further in this research. Other performance can be in the form of operational performance and factory performance, while other actions can be in the form of company initiatives in carrying out or disclosing CSR and distributing dividends on part of the profits generated by the company.

CONCLUSION

Based on the test results, it can be concluded that the application of environmental management accounting has no effect on environmental performance and environmental performance has no effect on financial performance. The test results also show that environmental performance cannot be a mediator in the relationship between environmental management accounting and financial performance.

Suggestions for future researchers are related to the research sample. Future researchers are strongly advised to use a single industrial sector so that different results can be obtained from this research. Suggestions for companies that have attempted to preserve the environment through implementing AML are that companies can produce better business decisions in terms of environmental management by utilizing the physical and monetary information produced so that companies are able to achieve the desired environmental performance and improve the company's financial performance in the long term. long.

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*Corresponding Author: **Mar'a Elthaf Ilahiyah.**