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Perception of Environmental Management Accounting Practices on Environmental Performance

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Abstract

The objective of this study is to determine the impact of environmental management accounting practices on environmental performance at Tunku Puteri Intan Safinaz School of Accountancy (TISSA), Universiti Utara Malaysia (UUM). To measure the environmental performance of TISSA, monetary environmental management accounting (MEMA) and physical environmental management accounting (PEMA) practices were used. This research was conducted using an online questionnaire distributed to the staff and students of the TISSA. A total of 101 respondents consisting of students and staff answered this survey. Multiple regression analysis was used to analyze the results of the survey. The results show that there is a significant impact of MEMA and PEMA practices on environmental performance.

Keywords: Environmental Management Accounting, MEMA, PEMA, Environmental Performance, Malaysia

Introduction

One of the most important issues in Malaysia is the environment. A strong environmental responsibility is important and is considered as one of the key aspects of an organization's sustainability (Al-Mawali, Al Sharif, Rumman, Kerzan, & Liu, 2018). Due to the public's high level of environmental awareness, all organizations are constantly concerned with ensuring that their activities do not harm the environment. Not only are they in the public eye, but they are also legally required to comply with environmental laws, regulations and standards to avoid penalties, legal problems and a bad reputation. These new requirements have prompted them to take new initiatives and adopt proactive approaches and strategies to reduce negative environmental impacts and improve their environmental performance.

Accordingly, some researchers have claimed that environmental sustainability efforts and practices would help the organization to acquire desirable attributes and improve their environmental performance (Al-Mawali et al., 2018). It has been pointed out that the implementation of environmental cost accounting (EMA) is able to address both the economic and environmental perspectives so that both factors can work together to improve organizational and environmental performance (Agustia, Sawarjuwono, & Dianawati, 2019). It has also been recognized that EMA practices (EMAP) are one of the management accounting tools that can be used to make changes in the organization's operations and reduce environmental impacts (Qian, Hoerisch, & Schaltegger, 2018).

Universities face environmental issues related to energy consumption, water consumption, waste management, paper consumption, recycling, etc. Implementing EMAP by identifying the costs associated with these environmental issues would help the organization to systematically manage their costs effectively and efficiently. It will help the organizations to identify the hidden costs associated with their unsustainable environmental activities that cannot be identified through traditional accounting practices. By using this approach, universities have been able to minimize both environmental costs and environmental impacts. The downside, however, is that insufficient documentation and information on all these issues makes it difficult to assess the associated costs; therefore, many of the costs have not been accounted for.

Although many studies have been conducted on the implementation of EMAP in industrial companies, there are few studies that address the use of EMAP in service-oriented organizations, especially in the higher education context. Moreover, it is still unclear to what extent the application of EMAP in the college would help the organization to improve its environmental performance. This lack of attention led this study to be conducted to fill the gap by investigating the extent of EMAP implementation on environmental performance, especially in universities. Therefore, this study mainly focuses on the costs associated with energy consumption, water consumption, paper consumption, and waste management as these are the major environmental issues faced by universities. These gaps should be considered for future research to investigate the implementation of EMA in universities from a broader perspective. Therefore, this study contributes to future research by highlighting the focus of EMAP research in the university context and pointing out gaps in the existing literature.

Literature Review

Overview of Environmental Management Accounting Practices

The concept of EMA was developed because of the increasing environmental problems that are of major concern to government, business, and society. The inadequacies of conventional accounting practices, which do not address these concerns due to a lack of information for the decision-making process regarding the organization's environmental activities, led to the introduction of EMA. In general, EMA is the process of identifying, collecting, reviewing, and reporting physical and financial information for better decision-making processes to improve the organization's environmental performance (Gunarathne et al., 2023). EMA has become an important framework for all industrial organizations in recent years. It is an effective mechanism that integrates all economic and accounting information, organizational activities, organizational capabilities, and information technology competencies to achieve

organizational and environmental goals. EMA provides both internal and external information to support the management decision-making process aimed at improving environmental performance by mitigating negative environmental impacts and promoting organizational sustainability (Christine, Yadiati, Afiah, & Fitrijanti, 2019).

EMAP helps identify and manage environmental costs and evaluate the benefits of environmental management strategies. It provides information on the flow of corporate resources that helps top management make wise decisions (Bresciani, Rehman, Giovando, & Alam, 2022). In this way, the organization can allocate resources and take further steps to mitigate potential environmental impacts.

The implementation of the EMAP brings numerous benefits that help the organization improve its environmental performance. Nzama, Olarewaju, Arise, and Ganiyu (2022) stated that EMAP implementation would help organizations improve pollution reduction strategies, use natural resources more efficiently, reduce unwanted costs, plan better waste management strategies, and identify better opportunities for material recycling.
Several empirical studies have demonstrated that EMA implementation can improve environmental performance. However, all these studies focus mainly on manufacturing companies. According to the study by Mukwarami, Nkwaira, and van der Poll (2023) on the application of EMA in the manufacturing sector, the supply chain management system, one of the EMA tools, has a positive effect on an organization's financial and environmental performance. In addition, the study by Fuzi, Habidin, Janudin, and Ong (2019) stated that EMAP can improve the environmental performance of manufacturing.

Despite the proven benefits of implementing EMAP in organizations, the level of EMAP adoption in universities is still extremely low. A study conducted by Olaoye and Adekanmbi (2018) on the implementation of EMA in Southwestern Nigerian universities asserts that the reasons for the slow adoption of EMAP are low prioritization of environmental cost consideration, resistance to change, lack of institutional pressure, and lack of environmental accountability. Therefore, this study focuses on the perceptions of EMAP in a faculty of a Malaysian public college in relation to environmental performance.

Monetary Environmental Management Accounting (MEMA)
Monetary environmental management accounting (MEMA) is similar to the scope of conventional accounting systems and is considered an extension of the scope of conventional financial entities (Fuzi, Adam, Idris, & Fadly, 2022). MEMA refers to the recording of environmental information in monetary units such as costs, savings, and revenues about the environmental impacts of corporate activities (Abdul Rahman, Meero, & Mansur, 2020). It involves the process of identifying costs and benefits associated with environmental issues such as energy and waste consumption, pollution prevention strategies, and technology investments.

The organization will be able to analyze the environmental information in monetary terms to get a sense of the potential financial impact that management may experience due to its environmental management policy and make a wise decision (Jama, Kiet, Saat, Othman, & Ramakrishnan, 2018). Therefore, MEMA can help organizations improve their financial and

environmental performance by identifying, preventing, controlling, and improving their overall performance.

Environmental costs incurred by an organization to manage, prevent, and control environmental impacts are considered part of the MEMA. Environmental costs include all costs associated with environmental damage and protection, including internal and external expenditures (Sary, Utami, & Andayani, 2022). This includes both internal and external costs, such as expenditures for violations of environmental regulations, fines and penalties, acquisition of new facilities and equipment for the purpose of environmental protection, and other investments to maintain a clean environment. A study conducted by Basuki and Irwanda (2018) reported that the company that successfully achieved eco-efficiency by implementing environmental cost practices to prevent pollution and waste. Thus, it was found that the introduction of environmental costs would help the organization to improve its environmental performance, especially in TISSA.

Physical Environmental Management Accounting (PEMA)

Physical Environmental Management Accounting (PEMA) refers to environmental information on the use and flow of materials and natural resources such as energy and water expressed in the physical unit (Mat Yusoh & Tuan Mat, 2020). PEMA is expressed in terms of physical units such as kilograms, meters, liters, tons, decibels (Abdul Rahman et al., 2020). PEMA evaluates the number of natural resources consumed and wasted by the organization and the impact on the environment. For example, PEMA can identify the amount of waste, energy, water, and other resources consumed in the organization's activities (Mat Yusoh & Tuan Mat, 2020). Therefore, the faculty can use all the information generated by the PEMA components to support internal decision making and identify relevant initiatives that can be put into practice to improve environmental performance.

This is because PEMA are considered environmental information about the organization's activities, they serve as a guide not only internally, but also to external stakeholders that organization's compliance with environmental regulations and its ability to achieve its goals. Therefore, PEMA serve as a monitoring tool for assessing the organization's environmental impact. However, researchers reported that non-monetary information, known as PEMA, carries less weight in conventional accounting compared to monetary measures, or MEMA (Qian et al., 2018). For example, environmental performance evaluation focuses on the costs attributed to the supplier but does not really consider the number of resources used.

Environmental Performance

Environmental concerns are becoming more serious in the 21st century (Deb, Rahman, & Rahman, 2022). Organizations should prioritize these concerns as environmental performance is increasingly emphasized by stakeholders. Environmental performance refers to the organization's results in relation to the environment. It serves as an indicator of the organization's ability to achieve environmental sustainability through effective monitoring, responsibility, and accountability in the conduct of the organization's activities. Good environmental practices will ensure the sustainability of the organization.

According to Le et al. (2019), despite growing environmental concerns, traditional management accounting practices are inadequate for measuring environmental performance due to their limitations. Therefore, EMA is used to help the organization assess relevant information about its environmental performance (Bresciani et al., 2022). It helps the organization analyse the information and make decisions that improve the quality of its environmental performance.

Research Methodology

This research uses a quantitative approach. In other words, the research was conducted using a questionnaire. The questionnaire for this study was created in Google Forms. The Google Form consists of a completed questionnaire that was distributed to the staff and students of Tunku Puteri Intan Safinaz School of Accountancy (TISSA), Universiti Utara Malaysia. The 5-point Likert scale from "strongly disagree" to "strongly agree" was used in the questionnaires to help respondents indicate their level of agreement or disagreement with the statements in the survey. The Likert scale was used to accurately reflect respondents' opinions. The questions in the survey were taken from previous research and adopted. The questionnaire was written entirely in English. It consists of three sections, namely Section A, Section B, and Section C. Section A contains the demographic data of the respondents, i.e., gender, age, race, religion, role, and academic qualification. Thus, a total of 15 questions were asked in the demographic section. In Section B, the given statements were used to assess the extent of MEMA and PEMA practices at TISSA, Universiti Utara Malaysia (UUM). Finally, Section C is about the impact of EMAP on environmental performance. Thus, the questionnaire contained a total of 29 questions.

A Proposed Conceptual Framework

Figure 1 outlines the conceptual framework of this study. The independent variables of this study are monetary environmental management accounting (MEMA) and physical environmental management accounting (PEMA), while the dependent variable of this study is environmental performance.

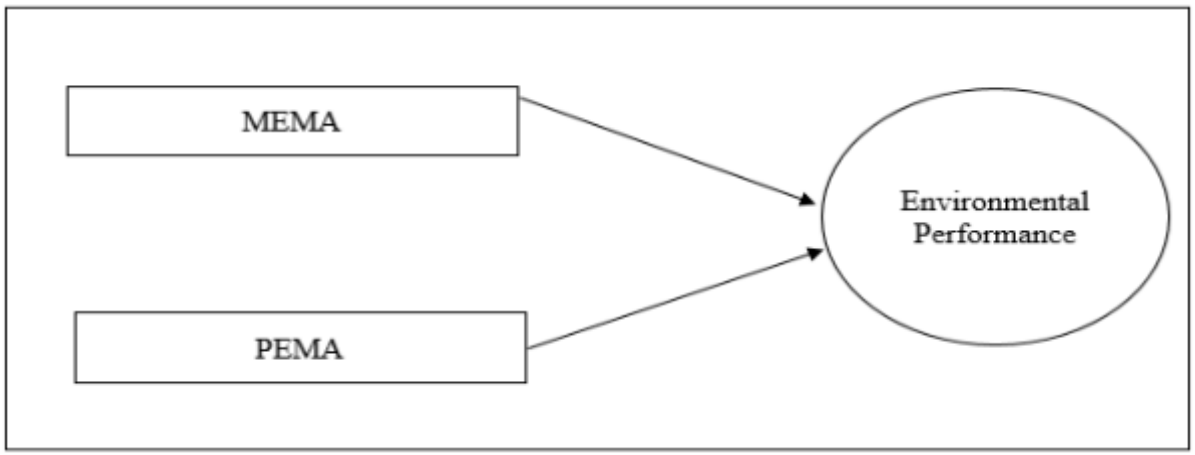

Figure 1. The Proposed Conceptual Framework

Notes: MEMA = Monetary Environmental Management Accounting; PEMA = Physical Environmental Management Accounting

Conclusions

The management of TISSA, UUM, should be aware of the increasing environmental problems caused by their activities. The results of this study emphasize that universities, i.e., service-oriented organizations, should continue to use EMAP, especially MEMA and PEMA, to assess the environmental costs associated with organizational activities. This will encourage management to improve environmental performance, which is consistent with the study findings. Apart from this, the EMAP should be used to achieve cost savings. By evaluating the costs associated with the organization's activities related to environmental performance, the organization would save unwanted costs, which would also help it to improve its financial performance. Therefore, EMAP can be considered as a control mechanism for TISSA to manage its activities.

This study has some limitations. First, the questionnaire was completed via an online Google form. It is possible that some respondents did not understand the questions correctly. This is because the Google questionnaire only consists of a brief explanation of the research topic. Although all respondents are from accounting faculty, it is unclear whether respondents are familiar with EMAP, especially first-year students. Therefore, this may lead first-year students who are not familiar with EMAP to simply select the responses, which may have little impact on the results of the research. The second limitation is the small number of staff who participated in this study. Another limitation is that the study only examined the two EMAPs, MEMA, and PEMA.

There are some recommendations for future researchers to explore EMAP in universities. Future researchers are advised to broaden their field of study. The university should be focused of their research, not just specific faculty. Future researchers could expand the population of the study by focusing on all students and staff at UUM to obtain accurate and reliable results on EMAP adoption. This is because a small population would not be able to represent the entire population of the university, and the results would not reflect the perspectives of all populations. In addition, future researchers could investigate other factors of EMAP that influence environmental performance. It is also recommended that other EMAP impacts be examined, such as financial performance and organizational performance, rather than focusing only on environmental performance.

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