

Factors Influencing Environmental Management Accounting Practices in Malaysian Manufacturing Industry: Exploratory Findings

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Environmental issues have been a critical concern as a result of rapid development and urbanization. It has attracted much attention around the world. Both the corporate world and the environment are equally crucial as corporations are the backbone of a nation's economic state while environment needs to be protected to ensure sustainability of beings. Accounting in general and management accounting in particular is no exception. Management Accounting has responded to the development through providing information that enable organisation to keep track on their performance towards the environment. Specifically, Environmental Management Accounting (EMA) has emerged as a practice that assists organisation to identify and analyse the financial (PEMA) and non-financial environmental (MEMA) related information. By having these information, organisation is able to balance both their performance without compromising on the element of environment. However, little is known about the progress of EMA practice among organisation and their motives of adoption. Thus, the objective of this paper is to explore the factors which influence the practice of EMA within the Malaysian context of manufacturing industry. Data was collected through a semi-structured interview from two (2) companies and three (3) local environmental authorities. The findings show that the practice of EMA is driven by customer demand to ensure that some form of environmental management is operationalised. In addition, compliance to the Malaysian environmental regulation is seen as important as corporates would rather manage corporate impact to the surrounding environment than being fined. The preliminary findings also suggest that while environmental management practice has not been made mandatory by their respective headquarters, it suggests that influence from their respective headquarters do present. Through the exploratory findings, this research has provided some insights to explain the slow progress of EMA practice in Malaysia and factors that can be introduced to promote EMA practice among organisations.

Keywords: EMA, EMS, manufacturing, environmental management, accounting.

I. INTRODUCTION

As environmental implications become more apparent, decision makers are forced to resolve issues beyond what is typically related to

operations. In line with the development, Environmental Management Accounting (EMA) practice has emerged in the literature as a mean to complement traditional management

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accounting in relation to environmental activities (Ferreira, Moulang and Hendro, 2010). EMA provides organisation that enable organisation to identify, collect and analyse financial and non-financial environmental related information (IFAC, 2005). Specifically, monetary environmental management accounting (MEMA) is the monetised units of the physical environmental information whereas the physical environmental management accounting (PEMA) is the physical units derived from the flow of energy, wastes, material and water (Burritt, Hahn and Schaltegger, 2002). Together, MEMA and PEMA play an important role to support decision making and corporate performance (Qian, Burritt and Chen, 2015).

However, studies on EMA are found to be at its infancy stage though moderately increasing. In addition, research on EMA practices have been predominantly focused on developed countries and less in emerging countries like Malaysia (Qian *et al.*, 2015; Gunarathne & Alahakoon, 2016). Thus, this research paper aims to contribute to the Malaysian literature. Specifically, a preliminary research had been conducted to identify the level of EMA practice and the factors that are influencing the practice of EMA in the Malaysian manufacturing industry.

The remaining sections of the paper will be organized as follows. The first section deals with review of previous literature on EMA. This is followed by the findings and discussion, and ends with conclusion.

II. LITERRATURE REVIEW

Inherited by its infancy development, limited is known about the factors influencing EMA practice. This is of concern to both organisation and policy maker in their effort towards promoting EMA practice. Notwithstanding on the limited interest given on EMA, handful of findings reveal that environmental sensitivity, company size, EMS adoption and the proportion of non-executive directors are found to have no correlation to the influence of EMA except for ownership status (Mokhtar, Jusoh and Zulkifli, 2016). On the other hand, a study reveals that the practice was mainly pressured from compliance of laws and regulations (Khalid, Lord and Dixon, 2012), where a fined from the authorities may lead to a negative reputation. These variations offer opportunity to the current research to explore further the possible factors that may motivate organisation to practice EMA.

In addition, pressure from customers in having certification or environmental awards is seen as essential especially for foreign customers. Proper certification ensures that proper procedures are being operationalized. Specifically, the ISO 14001 Environmental Management System is a structured system to address environmental bottom line (Ann, Zailani and Wahid, 2006). When integrated together with EMA, the two tools can assist in a sound environmental management. To execute EMS properly, the quantification of environmental information

is imperative through EMA (Ramli & Ismail, 2013).

In another study that investigated the factors influencing EMA practices in the Malaysian small-medium manufacturing firms, compliance and existing regulations was found to have a high relationship (Jalaludin, Sulaiman and Nik Ahmad, 2011). Specifically, pollution incidents law was recorded as the highest relation to EMA practice. This can be attributed to government pressure in complying with environmental regulations.

A similar study was carried out in the Malaysian manufacturing context (Jamil, Mohamed, Muhammad and Ali, 2015). The findings of the study reiterated that there was pressure from shareholders and stakeholders as well as the government in terms of environmental performance. They found that customers from the European market are the most demanding in terms of environmental processes and products. Thus, noteworthy that to date, literature on the factors influencing the EMA practice is apparently scant. The lack of knowledge in the progress of EMA among developing countries like Malaysia has motivated the current research to explore further the progress of EMA and the potential crucial factors that influence the practice of EMA with the context of Malaysian industry.

III. METHODOLOGY

The current research deployed a semi-structured interview to gather its data. The manufacturing

industry is scrutinized as it is one of the main contributors to the Malaysian environmental damage. This is due to the rapid growth of the manufacturing industry as one of the main GDP of Malaysia (Department of Statistics Malaysia, 2018). Hence, two manufacturing companies and three environmental government agencies were chosen as the subject of study. To ensure anonymity, the actual name of the chosen entities is not revealed and pseudo name is given instead. The entities chosen were: Company A manufactures steel and Company B manufactures copper foil. Agency A provides environmental certificates, Agency B manages the Malaysian overall environmental regulations and conditions while Agency C manages the Malaysian water, energy and green technology.

IV. FINDINGS AND DISCUSSIONS

Both the chosen companies that were interviewed are international companies. They receive international customers from Europe and the United States. Prior research has evidenced that customers from first world countries are more stringent in environmental laws (Department of Statistics Malaysia, 2018; Jamil *et al.*, 2015). Many of the Company A and Company B's customers perceive environmental performance as very important which reflected through their need to see that the company's products and processes are provided in an environmentally sound manner. Moreover, the strict environmental management

reflects the need to maintain ISO 14001 EMS certification. Company A pointed out the following:

“The reason for environmental performance is ISO 14001. So to maintain our certification, if our performance is not up to par, our certification can be revoked.”

Agency A reinforced this and stated that the ones that really emphasise are from developed countries such as Europe and Japan. While Agency A agreed that the certification was sought for business reasons, they also added that the certification was also used to improve company image.

The second findings emerge out of the interview is about the significant of environmental regulations as a factor in measuring environmental performance. The interviewed companies would rather avoid paying fines than not being careful and cause an environmental accident. Company B commented:

“I don’t think this industry can afford and that is why we are very careful. We would rather spend for the environment than paying this kind of expenses.”

However, all of the interviewed companies and agencies agreed that there are too many environmental regulations which resulted in a struggle to properly measure environmental

performance. This result is similar to a study in the Malaysian environmental sensitive industry (Department of Statistics Malaysia, 2018). In an example provided by Company A, every schedule wastes generator is required to have a scheduled waste manager. It is interesting to note that, Sabah and Sarawak are only producing less than half ton of waste but still need to go to the training which is only available at Peninsular Malaysia. As for Company B, they specified that the environmental regulations in Malaysia have a lot of ‘grey areas’, stating:

“For example, container contaminated with chemicals. Is it all chemicals contaminated? This is not really as some of the chemicals are bio-degradable. So is this kind of chemical considered as toxic?”

Furthermore, Agency B expressed the same sentiment in that enforcement seems to be a significant problem as some agencies have their own regulations apart from the EQA. Agency C agreed and specified:

“Actually the law is sufficient. The problem is that we have federal law and another is at state. Whatever regulations approved at federal not all are used under the state. For me, it is not about the law but more towards enforcement.”

Finally, the finding suggests that influence from their respective headquarters (HQ) also play a part. The interviewed companies stressed that

measuring environmental performance is not required or mandatory to the companies. However, in Company A, cooling towers are not required to be monitored in Malaysia whereas it is the opposite in Australia in that it is mandatory. Additionally, the company applies what is called aspirational targets from their HQ. The company's environmental strategy then comes from the aspirational targets. In the context of Japan, it has one of the most stringent environmental laws and as such it is foreseeable that Company B will have influences from their HQ. This is evidenced through the following comment:

“Our HQ is more concerned. They come in on and off to audit and do audit sharing. Our awareness in our staff is very high.”

Thus, the findings shows that many are now much more knowledgeable and conscious towards the environment in that they require companies to have some form of environmental management being operationalised. The practice of EMA can assist in providing a sound management of the environment.

V. SUMMARY

In conclusion, the state of environment has moved to more than just awareness over the recent years. It is now looked into both physical and monetary aspects of environmental management practices. The practice of EMA caters the two aspects. Thus, there is a need to further explore EMA practice. Through the exploratory findings, this research has brought light into the 'why' EMA practice is slow in Malaysia. This research can also serves as a mean to promote EMA practice within the Malaysian companies through better environmental regulations and may assist further research.

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[1] Ann, G.E., Zailani, S. & Wahid, Z.N. (2006). A study on the impact of environmental management system (EMS) certification towards firms' performance in Malaysia', *Management of Environmental Quality. An International Journal*, vol. 17, no. 1, pp. 73–93.

[2] Burritt, R.L., Hahn, T., Schaltegger, S. (2002). Towards a Comprehensive Framework for Environmental Management Accounting – Links Between Business Actors and Environmental Management Accounting Tools. *Australian Accounting Review*, vol. 12, no. 2, pp. 39-50.

[3] Department of Statistics

Malaysia 2018, Press Release Monthly Manufacturing Statistics Malaysia November 2017.

[4] Ferreira A., Moulang, C. & Hendro, B. (2010). Environmental management accounting and innovation: an exploratory analysis. *Accounting, Auditing & Accountability Journal*, vol. 23, no. 7, pp. 920–948.

[5] Gunarathne, A.D.N. & Alahakoon, Y. (2016). Environmental Management Accounting Practices and their Diffusion: The Sri Lankan Experience. *NSBM Journal of Management*, vol. 2, no. 1, pp. 1-26.

[6] IFAC 2005, International Guidance Document, EMA 2005.

[7] Jalaludin, D., Sulaiman, M. & Nik Ahmad, N.N. (2011). Environmental Management Accounting: An Empirical Investigation of Manufacturing Companies in Malaysia. *Journal of Asia-Pacific Centre for Environmental Accountability*, vol. 16, no. 3, pp. 31-45.

[8] Jamil, C.Z.M., Mohamed, R., Muhammad, F. & Ali, A. (2015). Environmental management accounting practices in small medium manufacturing firms. *Procedia-Social and Behavioral Sciences*, vol. 172, pp. 619-626.

[9] Khalid, F.M., Lord, R. & Dixon, K. (2012). Environmental Management Accounting Implementation in Environmentally Sensitive Industries in Malaysia, in 6th NZ Management Accounting Conference, 22-23 November 2012, Palmerston North.

[10] Mokhtar, N., Jusoh, R. & Zulkifli, N. (2016). Corporate characteristics and environmental management accounting

(EMA) implementation: evidence from Malaysian public listed companies (PLCs). *Journal of Cleaner Production*, vol. 136, pp. 1-12.

[11] Qian, W., Burritt, R. & Chen, J. (2015). The potential for environmental management accounting development in China. *Journal of Accounting & Organizational Change*, vol. 11, no. 10, pp. 406-428.

[12] Ramli, A. & Ismail, M.S. (2013). Environmental Management Accounting Practices: A Survey of ISO 14001 Certified Malaysian Organizations. *Journal of Energy Technologies and Policy*, vol. 3, no. 11, pp. 415-432.