

The Adoption of Environmental Management Accounting in Thailand

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This paper examines key determinants that drive the adoption of environmental management accounting, using pulp and paper companies in Thailand as an exploratory case study. It employs mixed methods research design, combining qualitative and quantitative approaches. The findings reveal that there are three primary factors influencing the adoption of environmental management accounting: top management roles, knowledge sharing and building corporate images. As an exploratory case study, it would also be beneficial to pursue comparative research between countries and regions.

Keywords: Environmental Management Accounting, Top Management Roles, Knowledge Sharing, Image, Pulp and Paper, Thailand

การนำการบัญชีเพื่อการจัดการสิ่งแวดล้อมเข้ามาใช้ในประเทศไทย

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รองศาสตราจารย์ประจำภาควิชาการบัญชี คณะพาณิชยศาสตร์และการบัญชี มหาวิทยาลัยธรรมศาสตร์

ABSTRACT

บทความนี้ได้ตรวจสอบปัจจัยหลักที่มีอิทธิพลผลักดันให้มีการนำการบัญชีเพื่อการจัดการสิ่งแวดล้อมเข้ามาใช้ในองค์กร โดยใช้บริษัทผลิตเยื่อกระดาษและกระดาษในประเทศไทยเป็นกรณีศึกษาเชิงสำรวจ วิธีวิจัยได้ออกแบบให้มีการผสมผสานระหว่างการใช้วิธีวิจัยเชิงคุณภาพกับการใช้วิธีวิจัยเชิงปริมาณ ผลการวิจัยพบว่าปัจจัยหลัก 3 ประการที่มีอิทธิพลผลักดันให้มีการนำการบัญชีเพื่อการจัดการสิ่งแวดล้อมเข้ามาใช้ในองค์กรประกอบด้วย: บทบาทของผู้บริหารระดับสูง การแบ่งปันความรู้และการสร้างภาพลักษณ์ขององค์กร ในฐานะที่เป็นงานวิจัยเชิงสำรวจ ผู้วิจัยมีความเห็นว่าจะเป็นประโยชน์อย่างยิ่งถ้าจะมีการทำวิจัยเปรียบเทียบระหว่างประเทศและระหว่างภูมิภาคต่อไปในอนาคต

คำสำคัญ: การบัญชีเพื่อการจัดการสิ่งแวดล้อม บทบาทของผู้บริหารระดับสูง การแบ่งปันความรู้ ภาพลักษณ์เยื่อและกระดาษ ประเทศไทย

Introduction

Worldwide production and consumption patterns have without doubt given rise to large-scale negative environmental impact. The pulp and paper industry has historically been seen as one of the industries generating the highest level of pollutants, including solid wastes, gaseous emissions and waste water (DIW, 1999). The untreated wastewater has on many occasions caused negative effects to eco-systems, domestic water supply and natural food resources. Moreover, the pulp and paper industry has an impact on the human respiratory system due to the release of air pollution into local communities (Jawit, Kroeze, Soontaranun & Hordijk, 2006). The actions lead to emotional disputes between pulp and paper companies and local communities (Sonnenfeld, 2002). In this regard, there is a great deal of pressure from external stakeholders to create a new way to operate this type of business. Management needs to obtain information of environmental performance, including monetary and non-monetary value (Koehler, 2001), and, among other things, the degree to which objectives arising from environmental policies have been met, and to support accountability in the area of legal compliance (Schaltegger & Burritt, 2000; Frost & Wilmschur, 2000; Koehler, 2001; Staniskis & Stasiskiene, 2004).

To date, environmental management accounting in Thailand is still in early stages and there seems to be relatively little research that attempts to identify what would encourage the adoption of environmental management accounting.

Prior studies frequently focus on corporate social disclosure (Kuasirikun & Sherer, 2004), attitudes to social and environmental accounting (Kuasirikun, 2005), barriers to environmental management accounting (Setthasakko, 2010), sustainability assurance and auditing (Ridley, D'Silva & Szombathelyi, 2011), eco-efficiency (Charmondusit & Keartpakpraek, 2011) and eco-budgeting (Setthasakko, 2012). This paper aims to fill that gap by exploring determinants of the adoption of environmental management accounting, using the pulp and paper industry as an exploratory case. A key research question is addressed:

What are the determinants of the adoption of environmental management accounting in Thailand?

Environmental management accounting: EMA

Environmental management accounting is a relatively new subject area that provides essential data for corporate environmental management. Implementing environmental management accounting ranges from simple methods to more integrated practices that link the monetary and non-monetary value of environmental performance. It, however, includes reporting to stakeholders (IFAC, 2005) as one means of communicating corporate environmental activities. In other words, EMA is a tool that assists firms to manage environmental performance and reports environmental information to stakeholders (IFAC, 2005). The implementation of EMA leads to cost savings opportunities, energy savings potential and

waste reduction (Schaltegger, Viere & Zvezdov, 2012; Kasemset, Chernsupornchai & Pala-ud, 2014)

Research methodology

This study was conducted utilizing mixed methods research design (Singleton & Staits, 1999). It implied the collection and analysis of both qualitative and quantitative data in a single industry. Through the mixed methods, the researcher was able to obtain a more holistic perspective of determinants of the adoption of environmental management accounting. The pulp and paper industry was designated as a focus of study because the production process of pulp and paper is environmentally sensitive and historically a major source of serious air and water pollution. As a result, pulp mills have been a chief focus of environmental regulations all around the world, pressuring them to develop systems of internal regulation and record keeping.

1. A qualitative study

In this study, two data sources were used: interviews and documentation. Semi-structured interviews were conducted with six key informants, including two vice presidents, two environmental managers and two accounting directors of Company X and Company Y. Interview data was subsequently analyzed by using the method suggested by Miles and Huberman (1994), involving processes of data reduction, data display and conclusion drawing/verification. To further ground the study, background information on the companies and the industry was collected from annual reports and

academic literature. In order to gain validity and greater confidence in generalization, these findings were used to construct a structured questionnaire.

1.1 Profiles of the companies studied

The criterion for choosing the two companies was based on the fact that they have adopted environmental management systems and received ISO 14000 certification. The chief differences between the two companies are years of operation and major customers. The companies are referred to here under the pseudonyms Company X and Company Y. The features of the companies are given below.

Company X was established in 2000. A total of 60 percent of the company's products are exported to the European Union, the USA, Australia and Vietnam. Recognizing that water is an essential raw material for its operations, the company has applied the 3R concept for water conservation.

Company Y was founded in 1990. Forty percent of its sales come from exports to the USA, Vietnam, China, Hong Kong, Singapore and Malaysia. Its involvement in environmental management systems includes a purchasing policy requiring green procurement and the reduction of waste and emissions from production activities and other processes.

2. A quantitative study

The survey instrument was self-report format with attitudinal variables. Each item of qualitative findings consisted of a 5-point Likert scale ranging from "not at all" to "very important". One hundred

and twenty eight structured questionnaires were mailed to pulp and paper companies in Thailand. The covering letter and the instructions indicated that the survey respondent should be an accounting director, or failing that, the firm should forward it to someone familiar with these issues. Descriptive statistics were performed in order to test the findings derived from a qualitative approach.

Findings

With the application of a holistic perspective coupled with the use of (1) in-depth interviews with vice presidents, environmental managers and accounting directors and (2) a structured questionnaire survey, key determinants of the adoption of environmental management accounting in the pulp and paper industry in Thailand begin to emerge.

1. Qualitative findings

1.1 Top management roles: leadership and support

It would appear that the success of implementing corporate environmental management depends on the ability to manage humans. Prior studies indicate that leadership and support of top management is a critical success factor to any environmental management practices (Epstein & Roy, 1998; Henriques & Sadosky, 1999; Stone, Joseph & Blodgett, 2004; Zhu & Sarkis, 2004). Especially in the Thai cultures, Thai people acknowledge strong hierarchy based on the inherent differences in status (Hofstede,

1991). This means that Thai subordinates accept a hierarchical order and recognize their bosses' leadership (Vance, Mc Claine, Boji & Stage, 1992). They expect to be told what to do within their abilities (Cooper, 1994).

Key informants indicated that for Thailand in particular, top management leadership is vital to implement environmental management accounting. This is consistent with the explanation below:

“Due to management’s green vision, our company invested heavily in online information technology systems four years ago. The online systems allow employees to accurately and completely collect, analyze and evaluate financial and non-financial environmental information. (Vice President, Company X)

“Top management leadership is important for the development of green accounting. In general, employees follow management’s direction and corporate philosophy. To attain the environmental goals of the company, accountants have to bring themselves in line with top management requirements, although this is not an easy task when it involves environmental management practices. They need to work together with the staffs of the production and environmental departments in order to gain green knowledge.” (Accounting Director, Company Y)

Apart from top management leadership, the findings also indicated that in the highly collectivist nature of Thailand, top management support also plays a key role in developing environmental management accounting. Top managers are in this

case more likely to go forward with actions that support environmental management accounting practices. The responses included:

“The implementation of environmental management accounting takes time and resources. Because of a promise given by the board of directors and managing director to achieve a business sustainable leadership in the Thai pulp and paper industry, they play a key role in support of the process of implementing environmental management accounting. For instance, they have provided resources, commitment and time for the process of organizational change” (Accounting Director, Company X)

“Involvement of my boss appears to be an important factor in fruitful implementation of green accounting in organizations. It affects the amount of resources devoted to the integration of environmental issues into existing cost accounting systems.” (Accounting Director, Company Y)

The findings indicate that in a collectivist society, leadership and support from top management is one of the main drivers for implementing environmental management accounting. Absence of active top management involvement can make it difficult for the companies studied to integrate environmental activities into their cost accounting systems. Consequently, the goal of improving environmental performance is unlikely to be achieved.

1.2 Knowledge sharing: a cross-functional team and training

Although top management leadership and support is important, it is not sufficient in and of

itself. The adoption of environmental management accounting also depends on interaction and communication among employees. A cross-functional team could play an important role in sharing complementary knowledge and skills within the work groups. The shared practices of day-to-day activities, where employees make sense of what they do and how and why they do it, often goes with interrelation of day-to-day practices and communicative acts mainly based on face-to-face interaction (Narvesa & Takeuchi, 1995).

An informant pointed out that the role of accounting is now not limited to traditional accounting practices; rather it takes a broad view of both financial and non-financial information of environmental performance. This means that accountants need to work together with other personnel involved in environmental management practices in order to share green information and skills. The statement quoted below reflects the importance of a cross-functional team:

“The adoption of environmental management accounting would be easier if accountants understand the activities of environmental management practices. Accountants need to go to factories in order to acquire and share knowledge with engineers and environmental personnel.” (Accounting Director, Company Y)

Apart from a cross-functional team, training programs are necessary for employees. The following statements highlight the importance of training for sharing environmental knowledge:

“In my opinion, a training program relating to environmental management accounting is necessary

for all accounting personnel. If possible, the Federation of Accounting Professionals in Thailand or other government agencies should be providing EMA training programs to Thai accountants instead of only teaching the application of international financial reporting standards or IFRS. ” (Accounting Director, Company X)

“One of the key success factors for boosting innovation is to actively promote the culture of knowledge sharing and continuous learning. We therefore provide a variety of training courses that encourage employees to be innovative such as safety and environmental courses.” (Environmental Manager, Company Y)

In summary, the findings clearly demonstrate that a cross-functional team and training are effective mechanisms for sharing green knowledge, skills and expertise with Thai accounting personnel. These mechanisms give them a clearer understanding of how to successfully implement environmental management accounting.

1.3 Building corporate images

From a global point of view, environmental protection has become an international issue and has gained universal appeal. Steady environmental deterioration over the last few decades has drastically increased stakeholders’ awareness of global environmental problems. To address these concerns, companies have to provide credible information about the environmental friendly attribute of their products and processes for green institutional lending, communities, customers and shareholders (Berry & Rondinelli, 2000; Branco & Rodrigues, 2006). The statements quoted below

indicate that building corporate images has an impact on the adoption of environmental management accounting in the pulp and paper companies in Thailand:

“The adoption of EMA enables us to introduce features of environmental management practices to visitors such as foreign financial institutions in a manner that made it easy to understand our production processes and impact on the environment and communities. In so doing, we have assured them of our environmental performance.” (Vice President, Company X)

“Producing sustainability reports based on the GRI guidelines enables us to be ranked at an equal level to other world class pulp and paper companies. The reporting experience has been shared with other Thai companies in various seminars and CSR forums.” (Vice President, Company Y)

The findings indicate that building corporate images is a main reason for the adoption of environmental management accounting in the pulp and paper companies in Thailand. The transparency of environmental practices brings about business credit as well as trust from partners in business and consumers who want to know what is inside a company.

2. Quantitative results

In this section, the results from the questionnaire survey are presented. A total of 33 out of 128 companies were reached, for a response rate of 27.97 percent. For a postal survey, this is satisfactory because surveys

undertaken in environmentally sensitive industries as a rule tend to have a low response rate. Respondents were primarily senior level managers, which included CEOs, environmental managers, production managers and accounting directors, all of which had university education. In terms of establishment, approximately 72.73 percent of the participating companies have been established for more than 15 years. Table 1 provides data on age of company (years). The distribution of the sample companies by age of company guarantees a fair representation of both experienced and young enterprises.

Table 1 Age of company (Years)

Years Established	Number	Percentage
Below 6	3	9.09
6-10	2	6.06
11-15	4	12.12
Over 15	24	72.73
Total	33	100.00

2.1 Determinants of the adoption of environmental management accounting

Table 2 shows that respondents agree quite strongly with the prior findings of qualitative study. Based on the mean measures of main drivers and facilitators, they rated higher on “top management leadership” (4.58), “top management support” (4.45), “a cross-functional team” (4.06), “building corporate images” (4.00). However, agreement about training was not quite as strong as about “a cross-functional team”. Respondents rated the item at 3.64. This shows that Thai employees prefer a cross-functional team over a training program that is essentially basic, instructor-led learning.

Overall, the analysis of the questionnaire survey showed strong confirmation that determinants of the adoption of environmental management accounting are top management roles: leadership and support, knowledge sharing: a cross-functional team and training and building corporate images.

Table 2 Descriptive statistics - Determinants of the adoption of environmental management accounting

Determinants	Mean	Standard deviation
Top management leadership	4.58	.614
Top management support	4.45	.617
A cross-functional team	4.06	.810
Building corporate images	4.00	.978
Training	3.64	.962

Discussion and conclusions

The purpose of this study is to examine key determinants of the adoption of environmental management accounting in Thailand. The study identifies three primary influential factors: (i) top management roles, (ii) knowledge sharing and (iii) building corporate images.

With regard to the nature of Thai culture, this study points out that leadership and support of top management is a critical success factor in implementing environmental management accounting in Thailand. The fact of the matter is that Thailand is classified as a high-power-distance society in which inequality is accepted as a norm. Thai employees tend to accept a hierarchical order and recognize top management roles in making decisions and solving problems. In the light of this, leadership and support of top management become a key determinant of the adoption of environmental management.

In addition, the evidence may be due to in part to the cultural context, Thai employees would prefer a cross-functional team-based work rather than a training program, which is traditional one-way communication. The Thai social system is a collectivist society that places high value on harmony and a high degree of interpersonal interaction. In light of this, a cross-functional team becomes a primary means of sharing environmental knowledge and enhancing cooperation within the workgroup in the pulp and paper companies.

The Thai case also shows that building corporate images is one reason behind the adoption of environmental management accounting. This study indicates that the companies studied create green images as ways for them to grow their profits, raise funds from green institutional lending and enhance corporate images with shareholders and the public at large.

An understanding of the determinants derived from this exploratory case study done with the use of in-depth interviews and a structured questionnaire survey will assist in successful adoption of environmental management accounting in Thailand. Once this is achieved, the industry's contribution to environmental emissions and human toxicity will be reduced and at the same time, companies would polish their corporate images.

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