Measuring Waste in Malaysia: A Neglected Approach

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Abstract

The aim of this paper is to explore the reasons why Full Cost Accounting (FCA) has not been adopted by solid waste management (SWM) in Malaysia. A case study methodology is used for the exploratory research undertaken in this study. The thematic analysis used reveals that lack of regulation is a central barrier to the adoption of FCA. FCA emerges as a supported but little understood concept among participants who are environmentally sensitive. It is concluded that although Kuching community is environmentally sensitive it is not yet at the stage where FCA could be effectively supported.

1. Introduction

There is growing awareness of the benefit of public participation in environmental management. The shift by corporations and governments towards sustainable development has led to increasing recognition of the need for a measuring system which integrates economic, social and environmental costs. The need to integrate these costs into the management system is widely recognised across a range of industries including solid waste management (SWM). Full Cost Accounting (FCA) is regarded as one of the most comprehensive approaches that embraces economic, social and environmental dimensions, and strives to...
address all three dimensions at the same time. As much of the research concerned with FCA in SWM is
drawn from organisations in developed countries, there is limited knowledge about this issue in Malaysia.
The aim of this research study is to explore the reasons why FCA has not been adopted by SWM in Malaysia.

In section 2 a discussion of the existing knowledge relating to FCA and waste management is
presented. The need for incorporating social and environmental costs, is discussed to give an overall
picture. Then, section 3 provides a discussion of the case study research methodology used and a brief
discussion of the data collection process. It also addresses logically the methods and steps of thematic
analysis identified by Braun and Clarke (2006) that the researcher undertook to analyse the data and to
articulate them. Discussions of the main findings and conclusions that can be drawn about the research
study and its contributions to knowledge are provided in section 4. The strengths and limitations of the
research study are also discussed and finally recommendations for future research are provided.

2. The Existing Knowledge

Solid waste is becoming a major public health and environmental concern in many developing
countries due to rapid urbanisation and this has gained increased political awareness (Goh, 2007; Henry,
Yongsheng and Jun, 2006; Ogawa, 2007). The volume of total waste generated in cities and urban areas
across the globe is steadily increasing due to rapid industrialisation and population growth. This trend is
also evident in solid waste (Ogawa, 2007). The Consumers’ Association of Penang (CAP, 2001)
suggested that governments are increasingly concerned with finding methods to address this challenge.
Waste management lacks glamour but is vitally important to the survival of communities (Ogawa, 2007;
Kaseva and Gupta, 1996; Achankeng, 2004).

The costs of municipal solid waste management services have risen steadily over the past decade
(Macve, 2000). Local governments are trying to control SWM costs through a variety of measures,
including restructuring waste services and encouraging waste reduction. However, making effective
decisions and developing cost-effective waste management strategies can be difficult without complete
cost information (USEPA, 1998; USEPA, 2006). The research discussed in the USEPA studies recognises
the need to obtain complete cost information by incorporating environmental and social costs into
traditional accounting tools. This enables informed decisions about SWM, the identification of
opportunities for streamlining services, facilitating cost-saving efforts, and improving future planning.

Solid waste management is becoming increasingly complex and important. It is now a priority activity
for a clean and healthy country. Movement toward an integrated approach for measuring economic, social
and environmental factors in policy and decision-making has taken a number of different pathways over
the past 20 to 30 years (Gale and Stokoe, 2001; Jasch, 2003; Hung, Ma and Tang, 2007). Sustainable
development is perhaps one of the most universally known of these paths, having been accepted and
adopted by many influential international bodies (Joseph, 2006; Morrissey and Browne, 2004;

Historically, the environmental and social effects of SWM have been treated as external costs that have
not been incorporated into standard managerial and financial accounting practices. It has been claimed
that values arising from transactions beyond commercial transactions are excluded from the decision tools
advocated within conventional management accounting (Bebbington and Gray, 2001b; Milne, 1996). The
shift by corporations and governments towards sustainable development has led to increasing recognition
of the need for a measuring system and accounting tool which integrates economic value, environmental
value and social value. This supports Tanaka’s (2006) view that globally, in keeping with the UN
initiative, most countries are aware of the transition toward a sustainable society and are seriously
attempting to attain it. Achieving sustainable development means considering all the dimensions of
economic, environmental and social costs as a whole. In this way, the damaging trade-offs between them (which have resulted in unsustainable development) can be identified and avoided.

To help municipalities improve the cost-effectiveness of their solid waste systems the U.S Environmental Protection Agency (EPA) promotes the use of FCA and Kerr (2004) argues that FCA is a comprehensive form of incorporating economic, social and environmental costs. FCA can help prevent misconceptions that arise from a simple lack of cost information and support effective and informed judgments by citizens and clear management decisions (Florida Department of Environmental Protection, 1997). The adoption of FCA as a way to implement sustainable development was one of the suggestions to emerge from Agenda 21, a significant document arising from the Earth Summit (Bebbington, Gray, Hibbitt and Kirk, 2001a). The Malaysia Country Report (CAP, 2001) states that organisations have been asked to undertake a detailed study of the economic valuation of environmental externalities, cost benefit analysis and social impact assessment. This is yet to occur in a comprehensive way. Medley (1997), from an accounting perspective, argued that how to identify and measure the environmental costs and benefits will become clearer with a better understanding of how environmental issues interact with management processes and control within an organisation. Failure to develop adequate cost data can have serious consequences as for example, agencies might reject potentially cost-effective options or overlook opportunities to expand recycling and waste reduction programmes (USEPA, 2006). The simultaneous progression of economic, environmental and social goals is essential if development is to be sustainable (Gale et al., 2001; Bebbington et al., 2001a; Bebbington, Brown and Frame, 2007). The overriding principle is to integrate and involve all the concerned sectors in solid waste management so as to achieve sustainable goals. Bebbington et al. (2001a, 2001b) argue that there is little evidence of stewardship of sustainability among the actions of humankind.

FCA is a tool through which environmental impacts on factors such as stratospheric ozone layer depletion, air pollution, waste for cooling and land for waste disposal together with social impacts such as freedom from diseases and quality of life are considered. It enables decision-makers to consider the external impacts and cost/benefit data associated with environment and human health. FCA also allows for more thorough qualitative analysis when some impacts cannot be monetised. For example, impacts such as health care costs from specific air pollution events require a more thorough analysis to assign monetary value (Kerr, 2004). If local governments desire to promote good relationships with residents in the community, data generated by FCA systems can be used to address specific concerns voiced by the community about the cost and quality of SWM. There is also growing awareness of the benefit of public participation in environmental management (Achankeng, 2004; Jasch, 2003; Gale, 2006; Srinivas, 1997).

There are significant pressures upon SWM entities to shift towards sustainable development. Waste management is now seen as part of the broad global concern for sustainability and it clearly overflows national boundaries in terms of problems and possible solutions (Morrissey and Browne, 2004; Bovea and Powell, 2006). Further, there is urgent need for integration of waste management into strategies for sustainable development (International Atomic Energy Agency (IAEA, 2005). However, the degree of success with which developed countries and NICs cope with the problem differs. Achankeng (2004) has argued that developed countries are far more able to cope with the problem than other countries because they have sought effective solutions to help them move up the solid waste hierarchy. Most newly industrialised countries are still in the early process of the concept of sustainable development. Therefore, practices have been slow even though there appears to be initiative within the SWM industry to implement such a concept (Ogawa, 2007; Diaz and Golueke, 1985; Newly Industrialised Countries (NICs), 2007).

Research regarding the use of FCA has been widely concerned with developed countries such as the United States and Canada (USEPA, 1998; Boone and Rubenstein, 1997; Bebbington et al., 2001b). However, there have been very limited numbers of past attempts to understand the use of FCA as a tool
for the environmental and social accounting and reporting within newly industrialised countries. This gap in knowledge led to the concern of this research study to consider the applicability of FCA to SWM in the newly industrialised country of Malaysia.

3. Methodology

The research methodology used in this research study is an exploratory case study as such a study has not been conducted before and there is limited knowledge about FCA in the context of SWM in Malaysia. The case is the SWM department of the Kuching council and was selected because this is an exemplary SWM operation in Malaysia that does not use FCA. For this research study the researcher aimed to achieve an in-depth understanding of the issues relevant to the research problem and to generalise these according to the standards identified by Yin (1994, 2003). The data gathered for this research study is qualitative interview data. Thematic analysis is used because the researcher aims to obtain an in-depth understanding about the lack of use of FCA in SWM in Malaysia. As the research study is exploratory it is preferable to let the codes emerge from the primary data gathered rather than restrict the coding to what could be determined from existing literature prior to beginning the interviews.

This research study involved participants from the SWME in Kuching and from the local community. Based on the university’s policy, an ethics report was prepared by the researcher outlining the research design and addressing the ethical considerations involved. Only after obtaining approval from the University ethics committee, was the research study begun. This research study used informed consent and confidentiality to ensure the research study met ethical standards. Confidentiality was ensured through the use of pseudonyms. Physical records of all data collected were assigned a code to ensure anonymity.

The researcher undertook in-depth, semi-structured interviews with the participants. In total, 12 interviews were conducted (6 with council members in the SWME, 6 with residents). The interview questions were developed based on key issues in the literature. Open-ended questions were used to allow the interviewees the flexibility to expand upon their experience and volunteer further useful information. Each interview took between two and three hours to complete. All interviews were conducted by the researcher and were audio taped with the permission of the interviewee. These were subsequently transcribed by the researcher.

Braun and Clarke’s (2006) process of thematic analysis was used as the protocol for analysis of the interview data. The approach to data analysis was influenced by Yin’s argument that the data must be linked to the purpose of the research study. The qualitative data were analysed using the steps of thematic analysis identified by Braun and Clarke (2006). Transcription facilitated the researcher’s familiarisation with the interview data by assisting the researcher to understand the concepts emerging from data and identify incidents that gave insight into the phenomenon being studied. The researcher utilised the process of highlighting key phrases, sentences or paragraphs that appeared to be important and labelled these with a word or short phrase that reflected the concept. Data extracts referring to issues relating to SWM, FCA and Malaysia were coded. The coded data were sorted into themes. Memos of the decisions made throughout the sorting process were kept. The researcher kept a visual data base of themes by arranging them as labelled boxes. To further assist in managing the database the researcher numbered each theme.

Through the process of constantly comparing the themes and considering how they related to each other, categories were developed. This process of constant comparison was undertaken until all coded data extracts were placed in a category. Category labels were refined to ensure they reflected the dominant themes and working definitions were developed to retain the meaning of the category label. Before the categories were finalised the researcher reviewed them and the working definitions associated
with them to be sure they captured the story in the data. Once satisfied the researcher sort to clarify the relationships among each category.

4. Discussions and Conclusions

The need for regulation regarding SWM is a prevalent concern among residents and council members. However, council members were more likely to identify regulation as something that could alleviate the pressure on SWM by reducing illegal dumping, encouraging recycling and waste separation and facilitating the external cost reporting. They felt that this may assist them in providing the type of transparent information they and residents desired. The absence of regulation is also identified as a barrier to residents’ engaging in recycling and waste separation. The council cannot enforce these practices and has limited resources which constrain their ability to provide the types of strategies needed.

Residents are also aware of the importance of regulation although they do not specifically identify this as affecting their behaviour. Rather, they were more likely to identify the indirect impact of regulation upon their SWM practices. The belief underlying comments by residents is that regulation would improve practices within the SWM industry, including transparency in reporting external costs to residents, and that once such regulation is in place residents would be more willing to undertake waste separation and recycling. There is clearly some recognition among residents that the council has difficulties in enforcing change in residents’ SWM behaviour and, like the council members, view regulation as a way of facilitating this. The participant’s views that regulation is necessary before council could, or would, undertake external costs reporting identified that regulation is also central to adopting FCA. It is therefore concluded that regulation is the central factor in understanding why FCA is not in use in the case study SWM entity that is seeking to improve the sustainability of its SWM.

Participants want to see improvement in SWM in order to protect the environment of the Kuching region and the health of the City of Kuching. Council members express concern for the City of Kuching and the need to reduce reliance on landfill and protect the environment by engaging in more environmentally sustainable practices. Some council members frame their concern in a broader context identifying that ignoring the impact of SWM practices on the local environment would also have social consequences. Most council members, however, identify more concrete reasons such as their pride in the Healthy Cities programme which has been operating for 15 years and which they see as a direct contributor to a clean city, and Local Agenda 21 which focuses on urban waste and water quality in the Sarawak River. The link between a clean city and tourism is also identified as a reason for their desire to change the SWM practices of the council and improve the waste separation and recycling behaviour of residents.

A prevalent theme that emerges is residents concern for the City of Kuching. Residents are very aware of the need to change their SWM behaviour by engaging in recycling and waste separation and participating in initiatives provided by the council. Among those who have travelled to developed countries for work, holidays or education, there is a heightened awareness of the social and environmental consequences of the current SWM practices, particularly in relation to illegal dumping. For many residents there is a sense of urgency about the need to change because of their concern for Kuching. The Healthy City campaign is greatly appreciated by residents but the lack of clear understanding of the social and environmental costs of SWM is a considerable frustration to them. Residents argue that they are willing to participate in council initiatives and co-operate with council for the good of Kuching.

In summary, the lack of regulation is central to explaining why FCA has not been adopted and is unlikely to be so until regulation is in place. The concept of FCA is strongly supported by participants. Regulation is identified as something that can help create effective SWM. The absence of regulation is identified as a barrier to residents engaging in recycling and waste separation because the council could
not enforce these practices. The council is constrained in their ability to provide the type of information and education strategies needed due to limited resources. Regulation is necessary to provide an environment to encourage the council to undertake social and environmental cost reporting and is therefore the key factor in understanding why FCA is not in use in the case study SWM entity. Further, FCA is a new concept for many of the participants. However, the principle of social and environmental cost reporting is strongly supported by them. The need for FCA is recognised even among those who are not yet in a position to adopt such a tool. Several participants particularly those from the council, identified concerns with the transparency that would be a consequence of adoption FCA. Fear of the consequences of utilising a tool that would highlight unsustainable practices is a common finding within the literature. Concern for Kuching emerged as a driver due to the desire to see improvement in SWM in order to protect the environment of the Kuching region and the health of the City of Kuching. This city pride emerged from this research study as a possible explanation for participants’ desire to engage in more sustainable SWM. The literature has not previously mentioned this as a driver for the desire to engage in environmental management. It is concluded that although Kuching community is environmentally sensitive it is not yet at the stage where FCA could be effectively supported. At present it is hindered by the lack of regulation.

This research study contributes to knowledge by determining the applicability of FCA to the newly industrialised country of Malaysia. With the aim of contributing towards closing the gap in the existing research in the area of FCA in Malaysia in the SWM industry, this research study included residents’ awareness and knowledge in relation to the SWM. Residents’ perspectives have been largely overlooked in many previous research studies. The strength of this research study is the case study’s setting which is the newly industrialised country of Malaysia. Specifically, the case study explores a SWM entity in the Municipality of Kuching. This is one of the few studies to explore the concept of social and environmental reporting in a SWM entity in Malaysia. Further, this research study incorporates the views of the Kuching community to explore their level of understanding of environmental and social costs and the value they place on these. This is a strength because community views have been largely overlooked in the existing literature.

The focus of the research study is on one SWM entity within a single industry and this limits the generalisability of the findings. The findings of this research study cannot be generalised beyond the SWM entity studied as data collected were about the particular SWM entity. However, it is likely that the findings will have relevance to other SWM entities in Malaysia.

An area for future research is that of the role of city pride in influencing the desire to engage in more environmentally friendly SWM behaviour. This research study has found that city pride is a driver for behavioural change in this regard. In the context of SWM or FCA, city pride has not previously emerged as an important concept. Future research could focus on exploring the role of city pride in environmental behaviour in developed countries and comparing this to the findings of this research study.

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References


