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Research Paper

Understanding Barriers to Environmental Management Accounting Development and Implementation in Waste Management Among South African Municipalities

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Abstract
The objective of the study is to explore barriers obstructing the South Africa local government, public sector organization, from developing and implementing environmental management accounting (EMA) to improve municipal waste management from an institutional theory perspective. To attain the purpose of the study, 18 in depth interviews were conducted on 12 Chief Finance Officers and 6 municipal managers from 12 municipalities. Thematic analysis procedures reveals that absence of environmental accounting guidance, lack of employee training and skills, weak environmental legislation and regulations, weak stakeholders' pressure to apply environmental accounting, and financial barriers are key hindrance of developing EMA in the South African local government.

Keywords
Environmental Management Accounting, Local Government, Institutional Theory, Waste Management, In Depth Interviews

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1. INTRODUCTION

The speedy economic expansion experienced by South Africa since 1994 has spurred numerous environmental problems facing the nation. Dating back to 30 years, South Africa's population has tremendously grown beyond estimations (Adeleke et al., 2021). This has created an unanticipated pressure on land and waste management. South Africa produces 108 million tons of waste annually, 90% of which still goes to the country's landfills (Department of Water Affairs and Forestry, 2019). This creates a waste crisis within local communities. In addition, the waste crisis borders on to create critical environmental, and social challenges such as public health problems, pollution and emissions.

In face of the above, the role of local government becomes absolutely important to handle and address waste management. Local governments have been mandated to develop sustainable solutions to address waste management (Qian et al., 2011). United nations in rio summit voice that the local government's involvement will be central to sustainable development. In South Africa, the government under the polokwane declaration targeted to reduce waste generation and disposal by 50% by 2022 but has since been revised to 2025 (Department of Water Affairs and Forestry, 2019). This is an indication that the country is slow in recycling. The plan is a product of national crisis of growing environmental challenges due to improper municipal waste management. The nation has been forced to live with the glaring reality of poor solid waste management by the local government. Despite this, landfills in South Africa are anticipated to be fully occupied within few years. Gauteng, which occupies about 45% of the country's municipal waste, remains without new permits for landfills in two decades (Mbulawa, 2019). To help change South Africa's wasteful habits, the government introduced the national waste management strategy 2020. Also, South Africa, through the national waste management act no. 59 of 2008, committed to improving better health, safety and the environment by avoiding and reducing of waste formation.

In the recent budget of 2020, the South African government spend about R13 billions of its total budget on environmental protection per annum. In this amount lies a huge share of waste management. This amount implies the government's effort and commitment to address waste management. But the high waste management expenditure reflects the poor management waste by municipalities. This is evidenced by failure to meet the original polokwane declaration by municipalities as reflected above. For this reason, local municipalities are expected to evaluate their performance in retrospect and document the causes thereof of failing to meet the polokwane declaration. This will assist

to identify areas for further improvement and amend the declaration.

In South Africa, absence of waste management accounting information has hindered performance of municipal waste management (Dlamini et al., 2019). Therefore, based on institutional theory, it appears important to understand what is obstructing the local government, a public sector organization, from developing and implementing environmental management accounting (EMA) to improve municipal waste management.

EMA has been defined in various approaches. To date, there is no single and universally accepted definition known yet. Rikhardsson et al. (2005) define EMA as "the generation, analysis and use of financial and non financial information in order to optimise corporate environmental and economic performance and to achieve sustainable businesses". In general, EMA combines environmental and economic accounting data to assist corporate decision makers improve decisions disturbing the connection between the two variables and firm performance (Qian et al., 2015). EMA's benefits includes enhancing pricing and product mix decisions, improving environmental performance, cost saving and aiding waste minimisation, revenue increment and upgrading improving capital market decisions. EMA concentrates on decision making processes. The underlying idea of EMA is to avail decision oriented data for corporate management in a bid to reach informed decisions and, in doing so, enhance the financial and environmental interaction of the company.

Additionally, studies of EMA adoption have largely concentrated on the industrialized countries and less in developing countries such as South Africa (Kelsall, 2020). Prior research has focused predominantly on environmentally sensitive industries particularly the manufacturing sector (Jalaludin et al., 2011; Setthasakko, 2010). In the manufacturing sector, the implementation and adoption of EMA has been extensively studied leaving the barriers to EMA development in the public sector Ferdous et al. (2019) such as the local government to be less researched (Qian et al., 2018). Setthasakko (2010) findings affirm that not much is empirically known about the key reasons of barriers to the development of EMA in emerging and developing countries. That leaves much of the barriers to originate and proposed from theoretical assumptions.

1.1 Institutional Theory

EMA in organizations has no commonly applied theoretical framework (Qian et al., 2011). Institutional theory is one theory that considers the organization as a component of the social system it operates. The idea is to attain legitimacy. Institutional theory emphasizes how conformity may lead to "increased stability, legitimacy, and access to resources" Ball and Craig (2010). Researchers believe that homogeneity emerge in companies, based on fluctuations in their institutional contexts, possibly contributing directly or indirectly to the use of contemporary organizational tools, such as accounting (Ball, 2005). BoumaMark and Veen (2002) posit that notwithstanding, lack of EMA research, and institutional theory can be helpful for describing motivations for using EMA. In the same vein, institutional theory assumes that the use of a specific accounting system such as EMA is largely motivated by the desire of the organization to meet the external pressures as opposed to the need for increased internal efficiency (Amoako et al., 2021). Applying multiple regressions analysis on manufacturing companies in Malaysia, Jalaludin et al. (2011) observe that institutional pressure is central to adoption of EMA by firms. In addition, Jamil et al. (2015) examined Malaysian small business' EMA adoption with institutional theory acting as the underpinning theory.

Ball (2005) view on institutional influences on EMA in local government note that social institutions contribute an important part in stimulating EMA applications in local government. Also, Ball (2005) observed that when the community has been forced by wider sense of environmental protection, like in Canadian municipals, environmental initiatives and accounting practices are coerced into an adoption to encounter such a development in community.

Researchers such as (Ball and Craig, 2010; Ferdous et al., 2019; Le and Nguyen, 2019; Ariffin, 2016; Kelsall, 2020) argued that homogeneity expands in companies based on changes within institutional contexts, which can either add positively or negatively to the usage of fresh corporate practices including EMA. Studies by (Le and Nguyen, 2019; Tulsi and JI, 2020; Molina-Azorín et al., 2009; Qian et al., 2018) have affirmed that institutional theory is fundamental in availing important information and observations associated with accounting and sustainability research. Usually, there are three elements that can instigate institutional isomorphic change (1) coercive pressure, (2) mimetic pressure, and (3) normative pressure.

Coercive pressure emerges due to pressure put on organizations by other organizations. This is produced by key stakeholders such as government agencies, non governmental organizations, customers and suppliers (Salim and Padfield, 2017). Due to coercive pressure, EMA application assists organizations to enhance environmental performance and economic benefits (Qian et al., 2018). Mimetic pressure arises due to organizations facing unprecedented conditions. In that manner, organizations tend to copy other organizations that seem to experience or once experienced similar problems. Mimetic pressure emerges when organizations are seized with competition to maintain superior performance. In this regard, EMA adoption aid companies to develop their social reputation (BoumaMark and Veen, 2002). Normative pressure emanates from professionalization, which happens because of formal education. This pressure emanates from training and accounting body membership (Amoako et al., 2021). Normative pressure is considered the most powerful and assertive in comparison to both coercive and mimetic

pressure (Jamil et al., 2015).

Qian et al. (2015) note that for each element of institutional theory coercive, cognitive and normative a reason is attached for organizations to use EMA tools. Institutional pressures can be motivators for EMA development (Amoako et al., 2021).

2. EXPERIMENTAL SECTION

Based on the exploratory nature of the study, in depth interviews are used. This method allows the interviewer to probe intensely into social and personal matters (DiCicco-Bloom and Crabtree, 2006). In addition, in depth interviews permits the researcher to conduct follow up questions and mine additional information to allow for a rich understanding of opinions and motivations (Yusof and Jamaludin, 2014). 12 municipalities were chosen in South Africa with a mixture of both metro municipalities and smaller municipalities specifically in towns because of its mandate to provide waste management services. 18 interviews were conducted with chief financial officers (12) and municipality managers (6). They were sampled based on the idea that the opinions of the accountants are crucial in attaining strong proof regarding EMA adoption (Burritt et al., 2002). Some interviews were also conducted over the telephone lasting about 20-30 minutes. Respondents were identified through purposive sampling.

2.1 Data Analysis

The transcripts of each interview were transcribed based on Braun and Clarke (2006) thematic analysis procedures. Theme or pattern identification is central to data conceptualisation. The following elaborates on themes that emerged from data analysis.

2.2 Profile of Respondents

According to the table below, about 55.6% of the respondents had either a master's degree or PhD. On average, 50% of the employees had been in their position for between 6 and 10 years. This implies that respondents are satisfactorily in a better position to knowledgeably answer in connection with municipalities' practices.

EMA is still in its infancy stages in South Africa (Mishelle, 2015). Focusing on barriers on EMA development in the local government will be a step ahead in trying to overcome them. This is important that barriers can be identified.

3. RESULTS AND DISCUSSION

3.1 Absence of EMA Guidelines

A critical theme that emerged from the interviews was that of absence of EMA guidelines to implement EMA with 88.9%. In South Africa, the government is limited to environmental accounting as EMA adoption is still voluntary. As a result, locally, there are no EMA guidelines developed to motivate accountants to incorporate environmental issues into current accounting systems and practices. The participants greatly believe that lack of EMA guidance is impeding EMA development within municipalities in South Africa. To quote one CFO: "*In our municipality, confusion is high on what EMA is. Without proper EMA standards, it will be practically impossible to apply EMA in our case. I am therefore restricted to my day to day duties without even thinking of EMA because of these mentioned reasons.*"

The absence of EMA guideline in local municipality exemplifies absence of normative pressure within the municipalities. This demonstrates that training and accounting bodies are failing to consider the South African local government as a potential organization to adopt EMA. Within enough normative pressure, the local government sector is prepared to adopt EMA as part of the mainstream accounting system.

The finding that the absence of EMA guidelines impedes EMA development resonates with previous studies such as (Setthasakko, 2010; Chathurangani and Madhusanka, 2019; Gunarathne and Lee, 2019). In line with this in Malaysia, Jalaludin et al. (2011) report that training and accounting body membership impacts the adoption of EMA. These scholars buttress that absence of EMA frameworks obstructs effective collection and identification of environment related data particularly in pollution prevention and waste management decisions. In countries such as Korea, Japan, and Denmark, government introduced EMA frameworks to curb this barrier. Also, Japanese institute of certified public accountants worked hand in hand with government on developing environmental management accounting guidance.

3.2 Lack of Employee Training and Skills

67.7% of CFOs and municipal managers interviewed suggest that their employees' lack of proper accounting training and skills is contributing to blocking EMA development. One CFO remarked: "*Our staff traditionally is employed without adequate qualifications due to improper remuneration of skilled personnel at that level. So, environmental accounting as an additional duty will be catastrophic. To use environmental accounting we will need more qualified staff who at the moment cannot match our salary scale. Also, this is a new accounting approach.*"

Lack of employee training and skills is a normative pressure perspective. In this case of South African local government, lack of employees professional skills is halting driving change in migrating from traditional accounting system to an integrated system recognising environmental activities. Thus, the local government sector in South Africa should work on having its staff have environmental management practices training. Another municipal manager recalled: "*Environmental accounting is a complex system. With our junior staff skills, I cannot recommend such a system within our systems. I think we need to first upgrade our employees' academic qualifications.*"

Tsui (2014) also observed that accountants do not pos-

sess sufficient EMA training and they assumed that EMA adoption was expensive. Also, it was observed that improving skills is positively associated with corporate performance (Phan et al., 2017).

3.3 Weak Environmental Legislation and Regulations

South Africa currently faces weal environmental legislation. This can be seen in local government where some environmental regulations are not properly recognised. The 18 sampled respondents, 61.1% believe that weak environmental legislation is bailing them out from developing and applying EMA systems within their municipalities. One municipal manager said: "*From a legislation standpoint, we are not required to use environmental accounting. In that case, applying EMA is not optional at the moment.*" This finding is in line (Qian et al., 2015; Jalaludin et al., 2011).

3.4 Weak Stakeholders' Pressure to Apply Environmental Accounting

Absence of reliable and timely information on waste management stops stakeholders from participating in the waste management initiatives by the municipality (Qian et al., 2018). This means without EMA in place, municipalities will continue to be immune from stakeholders' pressure because of absence of pressure to act in an environmentally friendly manner when dealing with waste management. On the other hand, municipalities in South Africa find comfort in not developing EMA systems to cater for waste management because of lack of outside pressure to do so. 11 of the 18 CFOs and municipal managers believe that with adequate stakeholders' pressure municipalities are inclined to adopt and develop EMA systems.

3.5 Other Barriers

A section of the sample respondents opine that lack of political will by the municipalities is leading to failure to recognise EMA within South African municipalities. This is because it is assumed that the EMA project is an expensive exercise with no financial benefit. A CFO noted: "*EMA concept is not widely understood within the broader community of local government such as councillors, MEC etc. For this reason, its application in wide ranging municipalities will be historic.*"

Also 50% of the respondents suggest that financial barriers are acting against developing EMA systems in the municipalities. About half of the interviewed participants confirm that EMA has a high implementation and maintenance cost. Having a high number of residents staying in informal towns, South African municipalities faces an acute financial challenge of collecting levies from those residents. This stretches the coffers of municipalities mainly in towns. So, when faced with EMA projects that normally involve large amounts of money for its execution, municipalities always project the short and long term benefits to its sustainability. This is also based on the school of thought that EMA implementation does produce related positive financial performance (Chathurangani and Madhusanka, 2019). In such circumstances EMA development is viewed as an outlay of financial resources without positive returns. The finding that EMA is an expensive project was supported by (Jamil et al., 2015; Yusof and Jamaludin, 2014; Salim and Padfield, 2017).

Sustainability is forcing organizations to be under constant pressure to align its operation with environmental activities. This helps achieve organizations' sustainability and global sustainability. But to achieve this, scholars argue that EMA was designed to overcome the limitation of traditional accounting system on environmental issues. However, in South Africa EMA is still new and thus receiving a slow uptake. It remains a difficult task to develop and integrate EMA into the conventional accounting system. The study of 12 municipalities in South Africa found four key barriers to EMA development in the local government. The study observed absence of EMA guidance as the key barrier to EMA development and implementation. Absence of EMA guidance creates complexities in analysing, identifying and reporting of environmental related data. The bottom line fact is that this reduces environmental performance. As such, the South African government must play a critical role of promoting EMA and designing EMA guidelines.

Also, lack of employee training and skills was pointed as influencing EMA development in local government of South Africa. This results in failure to incorporate environmental activities in the accounting system. In this manner, managers and other stakeholders cannot use environmental information to make informed decisions. Weak environmental legislation and regulations has been cited as a variable hindering EMA development in South Africa's municipalities. This positions the South African government in conjunction with education bodies under extreme pressure to drive and lead the campaign to have EMA framework in place for various sectors. It implies that the government is indirectly ignoring measures to improve public health challenges through failing to develop EMA guidelines.

Other reasons, though limited, such as lack of political will and limited financial capacity, that it is an expensive capacity, were observed in the interviews. The respondents' acknowledgement that EMA is an expensive exercise stems from the line of thought that EMA adoption does produce better financial performance. In the whole, the results confirm that barrier to EMA development within South African municipality is mainly lack of institutional pressure.

4. CONCLUSIONS

Factors hindering EMA adoption in South African municipalities have been unearthed. The study was based on data interview data from 12 municipalities' employees. Therefore, results have to be evaluated with due care for use in other circumstances. The study has also contributed to

extant literature, the study utilised data from South African municipalities to identify obstacles hampering sampled municipalities to use and implement EMA tools which has so far never been conducted in literature. The consequence of this research lies on municipalities to lessen environmental effects through overcoming barriers to EMA application.

The paper has limitations. It is possible that some responses to the questions in this research may be incomplete especially to EMA. The bias may influence the findings. Second, attention needs to be exercised in not over generalising findings as different sizes of municipalities have different statuses both financial and social. Factors that affect smaller municipalities to develop EMA systems might not be the same as those of a larger municipality.

Further research could delve into addressing some matters emerging from the interviews such as developing EMA guidance to assist with EMA adoption in the local government in South Africa. In addition, future research could use a larger sample to overcome weaknesses of small samples and thus allow generalizability of the results throughout South Africa.

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