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Translation of the management control system in a privatised solid waste management network

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Abstract

Purpose – The purpose of this paper is to help better understand the translation process of the management control system (MCS) of privatised solid waste management (SWM) towards creating a stable network.

Design/methodology/approach – Drawing on the actor network theory (ANT), the case of a privatised SWM was studied. Data were collected from all entities involved in the privatisation process of SWM, which include Department A, Corporation X and the private sector concessionaire. Six documents were reviewed, 20 interviews were conducted and two observations were carried out.

Findings – The findings reveal that the control mechanism of SWM is complex, involving the interaction between human and non-human actors. Non-human actors include the key performance indicators (KPIs) and the concessionaire agreement (CA), which are the main control mechanisms towards creating a stable SWM network. Essentially, stability is achieved when the KPIs and CA can influence the activities of both intra- and inter-organisational relationships.

Originality/value – This paper provides a better understanding of the translation process of the MCS that adds to the stability of the network of a privatised SWM from the lens of the ANT.

Keywords Management control system, Key performance indicators, Public sector, Solid waste management, Actor network theory

Paper type Research paper

1. Introduction

A management control system (MCS) is a system that aligns the management of resources with the achievement of a company's objectives (Langfield-smith, 1997). The MCS has been used to monitor the daily activities of companies. Currently, attention is being focused on alliances that lead to the expansion of organisational boundaries. Therefore, a new design for the MCS is essential. Hopwood (1996) and Otley (1994) studied broader management control functions and implications to the new business environment and revealed that businesses have started to focus only on their core business and outsource their non-core business functions. Since then, several studies have been conducted on the MCS with a focus on inter-firm relationships (Langfield-smith, 1997; Langfield-smith and Smith, 2003; Mouritsen *et al.*, 2001; Van-der-Meer-Kooistra and Vosselman, 2006). However, most of these studies encompass dyadic relationships, especially the relationship between buyer and supplier in the supply chain. Not much research work has been done on network relationships which involve more than two parties (Mauritsen *et al.*, 2010). Among the few

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earlier studies, Sage *et al.* (2011) attempted to understand project complexities (i.e. Skye Bridge Public Finance Initiative project as their case) using the actor network theory (ANT), and the authors have called for more related studies, particularly that use the ANT in the context of complex relationships. Further, in public organisations, not much attention has been given to study the role of the MCS in inter-organisational relationships (Barretta and Busco, 2011), even though the outsourcing process in public organisations shows an increasing trend after the introduction of the New Public Management (NPM) agenda.

In Malaysia, changes in the current business environment affect both the private and public sectors. One of the areas that is affected is solid waste management (SWM). Evidently, as stipulated in Section 72 of the Local Government Act 1972, SWM services must be provided by local governments. However, over the years, population, urbanisation, industrialisation and economic development have increased, and this situation has led to a huge amount of solid waste being dumped daily in residential areas, causing damage to human health, as well as resulting in adverse economic, environmental and biological effects. A tremendous amount of solid waste was generated due to the increasing population, at 38,427 metric tonnes per day in 2021, and the amount increased to 14 million metric tonnes per annum in 2022 (MIDA, 2022).

The privatisation of SWM in urban areas to the private vendors was initiated in 1993 by the local governments (Afroz and Masud, 2010; Periathamby and Hamid, 2009) and officially implemented in 1996 (Abd-Manaf *et al.*, 2009; Othman, 2002; Yahaya, 2008). This privatisation was decided upon in line with the objective of the government to provide an integrated, well-planned, well-managed, efficient and effective, technologically advanced SWM system (Afroz and Masud, 2010). Furthermore, this decision was seen as a solution to the problems faced by the local governments with regards to the SWM system, including insufficient financial resources, lack of expertise, illegal dumping, open burning and lack of proper solid waste disposal sites.

To manage the changes, a new SWM structure was implemented by the government. A new Department (referred to as Department A) and a corporation (referred to as Corporation X) were established under the Ministry of Urban Wellbeing, Housing and Local Government (MUHLG). The responsibility of Department A is to handle the issues related to regulations and conducting operations, while the responsibility of managing solid waste and handling the private vendors is under Corporation X. However, local governments would maintain their responsibility in terms of monitoring the cleanliness of areas under their jurisdiction. With the change of the management system, the responsibility of SWM is now shared between private vendors and the government. The private vendors are responsible for SWM, while Department A and Corporation X are responsible for monitoring the work done by the private vendors. Figure 1 shows the relationship among parties involved in the privatised SWM system.

The privatisation of SWM involved several parties which led to a more complex implementation. It involved different tiers of the government and the responsibilities for planning, operating and managing SWM are segregated among various parties. Abas and Ta Wee (2014) claimed that the segregation of waste management planning roles by the implementation bodies would create a conflict. In privatised SWM, for instance, Department A and Corporation X, on behalf of the government, must always ensure that the actions taken by the private vendors are in tandem with the government's objectives. However, Abdul-Aziz and Ali (2004) claimed that it is a challenge for the public sector because the public sector is known to have problems, such as lack of necessary skills and capabilities. This situation indicates the importance of having a good control system to align the diverse interests of each party. Taking this into consideration, the current study aims to understand

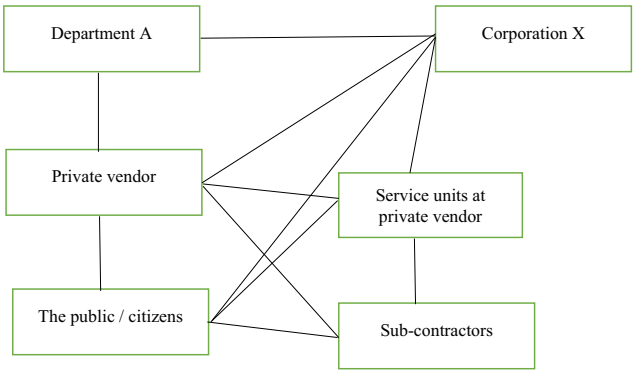


Figure 1.
The inter-relationship among parties in SWM network

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the translation process of the MCS of a privatised SWM towards creating a stable network in Malaysia using the ANT as the theoretical lens.

The present study contributes to the body of knowledge by revealing that key performance indicators (KPIs) can align the interests of all actors/parties in a privatised SWM network. Moreover, the study demonstrates how the same KPIs can be used in both inter-organisational and intra-organisational relationships, by both the public and private sectors. Theoretically, the study shows the relative power of the inscriptions in the ANT, i.e. the KPIs that are used towards creating a stable SWM network. The network reaches stability when all actors are united and represented by a single actor (Muhammad Zawawi, 2016).

The remainder of this paper is structured as follows. The next section provides the background information on SWM in Malaysia. Then, the subsequent section offers the review of relevant literature. This is followed by sections on theoretical framework and research methodology, followed by a section on findings and discussion. The final section is on implications, limitations and suggestions for future studies.

2. Solid waste management in Malaysia

In Malaysia, solid waste is managed directly and indirectly by the three tiers of the government, i.e. the Federal Government, the State Government and the Local Government. At the federal government level, SWM is under the purview of the MUHLG, the Ministry of Health and the Economic Planning Unit (EPU). The main roles of the federal government are to formulate policies related to SWM and to develop strategic plans for SWM at the macro-level. The federal government is also responsible for providing technical and financial assistance to the local governments for managing solid waste. At the second tier, the state government is responsible for guiding and assisting the local governments towards strengthening the institutional and financial capabilities of SWM. The state government is also responsible for providing land for solid waste disposal facilities (Moh and Abd-Manaf, 2017). The third tier is the local governments which is the closest entity to the public. It is responsible for providing SWM services either directly or by contracting the services to private contractors.

In 1988, Malaysia implemented the first plan related to SWM, known as the Action for Beautiful and Clean (ABC) Plan. The focus of the ABC Plan is to reduce solid waste generation. Although the ABC Plan has not been officially regulated, it is seen as a start to

the roadmap for better planning of SWM (Razali *et al.*, 2019). The ABC Plan led to two recycling programmes in 1993 and 2000. Subsequently, the National Strategic Plan (NSP) for SWM was formulated in 2002 and implemented in 2005 (Razali *et al.*, 2019). In 2006, a master plan for National Waste Minimisation (NWM) was introduced. The NWM Plan is also a part of the strategic plan, with its main objective being to provide stakeholders with a clear vision and strategies towards minimising the amount of solid waste disposal (Ta Wee and Abas, 2016).

Both the NSP for SWM and the NWM Plan provide a pathway for improving SWM services in Malaysia. Following the two strategic plans, Solid Waste and Public Cleansing Management Act 2007 (Act 672) was formulated and gazetted on 30 August 2007. However, Act 672 was only enforced in September 2011. The reason for the delay enforcement of Act 672 was to give enough time to Department A to prepare, i.e. employed staff, prepared regulations, set up department, for the full privatisation of SWM. The aim of Act 672 is to regulate and standardise SWM and public cleansing in Malaysia (Act 672, 2007). Act 672 applies to all states in Peninsular Malaysia and the federal territories of Kuala Lumpur, Putrajaya and Labuan. Two important events, i.e. privatisation and federalisation, were formally implemented with the introduction of Act 672.

To strengthen SWM services, Corporation X implemented the Strategic Plan 2014–2020. As an effort to cultivate a hygienic culture among Malaysians, the Strategic Plan was implemented based on seven core strategies and 36 sub-strategies. It covers eight aspects: mindset, behaviour and culture, collaboration and synergy, policy and regulations, organisational capacity, technology system and facilities, law enforcement and delivery system (Moh and Abd-Manaf, 2017). The Malaysian government's continuous efforts in formulating and improving public policies regarding SWM indicate its determination to improve SWM services in line with the government's sustainability agenda.

3. Literature review

The MCS is one of the management accounting tools that is extensively used to ensure the organisation's activities can achieve its objectives. The focus of MCS is on the organisation's execution strategies towards achieving the desired objectives. A well designed MCS is important for the success of the organisation as it can provide guidance to control the behaviour, change the perceptions of internal and external parties and discharge accountability (Rikhardsson *et al.*, 2021).

Historically, MCS was used in vertical relationships within firms. The focus was to constitute the boundary of the firm and reinforce organisational hierarchy (Hakansson *et al.*, 2010). During that time, the MCS was directed towards financial aims and developed within the boundary of a single organisation with several MCS frameworks being developed. Anthony (1965) proposed a framework for control, which is categorised into three components: Strategic Planning, Management Control and Operational Control.

The most frequently used MCS framework is Simons' lever of control framework, developed by Robert Simons in 1995. Simons' framework consists of four systems: belief systems, boundary systems, diagnostic control systems and interactive control systems. This framework has been criticised for having ill-defined concepts that create ambiguity. Thus, Tessier and Otley (2012) deconstructed the framework using micro- and macro-concepts. The revised framework separates managerial intentions from control and employees' perception of control. However, all these frameworks only provide a historical view which contrasts with contemporary organisational needs.

The current business environment has changed the framework from a vertical relationship to a horizontal relationship between firms, demonstrated by inter-organisational relationships,

including joint ventures, strategic alliances, strategic partnership, supply chain and outsourcing relationships. In line with this, the role of management control has evolved, where the scope is broader and is no longer confined within the boundaries of the organisation. The interactive use of various control systems, such as policies and procedures, can effectively influence inter-organisational relationships by ensuring the behaviour and decisions of both parties are consistent with each relationship's objectives (Gómez-conde, 2015).

Das and Teng (2001) identified three types of control systems in outsourcing relationships, i.e. output control, behaviour control and social control. Output control measures performance using specific indicators, such as KPIs; behaviour control is implemented based on the policy and contract used; while social control focuses on shared values, trust and the aims of parties involved in the relationship. Auzair *et al.* (2013) concurred with Das and Teng (2001), where they categorised MCS used in an inter-organisational relationship (especially outsourcing) into two categories: formal and informal controls.

The purpose of MCS in inter-organisational relationships is, firstly, to create a motivating environment between both parties involved to achieve the desired outcomes; and, secondly, to ensure coordination of independent tasks between both parties (Dekker, 2004). The MCS in inter-organisational relationships has become more crucial as it must influence the performance of the partnering organisations towards the strategic goals of the governing authority (Ahmad *et al.*, 2020).

The models developed for MCS in inter-organisational relationships includes the models by Langfield-smith (1997), Van-der-Meer-Kooistra and Vosselman (2000), Spekle (2001), Das and Teng (2001), Mouritsen *et al.* (2001), Langfield-smith and Smith (2003) and Mouritsen and Thrane (2006). Among the issues in the developed models are the importance of trust as an efficient mechanism of coordination and control, consideration of calculated risk in the relationship, the appropriation rights problem and concentration of the effort on the relationship between both organisations' directive levels. However, these models have been criticised for excluding the performance problem that arises from the possible misbehaviour of the actors or individuals in the relationship. Domingo and Giner (2010) proposed a MCS model for inter-organisational relationships that focuses on the concepts of central misfit and management control paths. One of the inter-organisational relationships is innovation partnership. It has been indicated that one of the causes of failure in this relationship is the high level of risk associated with alliances. Pistoni *et al.* (2022) indicated that MCS plays a key role in reducing the risks and the likelihood of failure in such partnerships, where trust appears as the only informal relationship that brings success to the collaboration.

The MCS is important at the early stage of the inter-organisational relationship. Ahmad *et al.* (2020) concluded that trust is developed during contract procurement and early implementation phases of an outsourcing relationship. They further suggested changing the MCS during this stage from formal control to more flexible informal control. Rooney and Cao (2019) identified the reasons for the adoption of management controls in an outsourcing relationship as adaptability and flexibility which may impact inter-organisational arrangements over time. The importance of clarifying the functional goals and the reasons for control adoption may help the parties responsible for outsourcing strategy and arrangements. It may also help to improve the understanding of relationships between changes in the business environment and subsequent emerging reasons to adopt new controls.

In the context of the public sector, the NPM agenda has transformed various government activities via the adoption of private sector ways of performance measurement and MCS. These initiatives include the encouragement of hybrid organisations, where public and

private entities work together to deliver public services (Marques *et al.*, 2011), which then creates more flexible organisational designs, externally monitored performance measures and targets, increased emphasis on consumers' needs and performance-based and responsive human resource management systems (Akkermans *et al.*, 2019; Cuganesan and Free, 2021).

KPIs are often used in performance-based contracts that are based on financial and non-financial measures, relative to the critical success factors of the organisation. KPIs normally measure four main aspects, namely, the financial aspect, work-processes, customers' satisfaction and employees' perspective, which also includes corporate social responsibility and learning and growth in the organisation (Yaacob and Aminuddin, 2011). KPIs guide the operations and managerial personnel on what needs to be done. How the KPIs are defined and monitored towards corrective action will determine the success of a particular activity (Sanjeevi and Shahabudeen, 2015; Ashraf *et al.*, 2016; Akkermans *et al.*, 2019; Asih *et al.*, 2020).

Sanjeevi and Shahabudeen (2015) grouped KPIs used in SWM into: financial indicators; social indicators; and environmental indicators. On the other hand, Amos *et al.* (2020), who developed KPIs for hospital services, asserted that the process of developing KPIs is complicated and challenging, given that practical guidelines may not be readily available. However, they agreed that KPIs are important for monitoring and evaluating performance against benchmarked standards and must reveal gaps between planned and achieved results to help organisations identify potential areas for improvement.

In Malaysia, many other performance measurements have been enforced before the adoption of KPIs, including Annual Work Targets (SKT), competency evaluation under the Malaysia Pension Scheme (SSM), assessment of efficiency of the Quality Management System through MS ISO 9000 and Total Quality Management (TQM), the ability to resolve problems innovatively through Quality Control Circles (KMK) and benchmarking of best practices through Quality Awards (Yaacob and Aminuddin, 2011). Zakaria *et al.* (2011) proved that the implementation of KPIs has been successful in Malaysian government agencies. They concluded that KPIs are used to measure:

- the effectiveness and efficiency of the internal work processes to deliver services;
- the productivity of human resources to provide and deliver services to customers; and
- customers' satisfaction with services received.

In the inter-organisational relationship, there are multiple types of relationships exist. Most past studies have focused on one-to-one relationships. There is limited discussion on managerial issues and the role of accounting in more complex situations. This is supported by Justesen and Mouritsen (2011) who asserted that the aforementioned has not been discussed by past researchers although it has become an increasingly important area. Hence, the present study focuses on the MCS in a complex relationship of a privatised SWM in creating a stable network.

4. Theoretical framework

The ANT is a theory that has its origins in sociology. Bruno Latour, Michel Callon and John Law first used the ANT to understand how science and technology are created (Callon, 1986, 1990; Latour, 1987, 1996, 1999, 2005; Law, 1992). The ANT has become of interest to accounting researchers since the early 1980s (Chua, 1995; Briers and Chua, 2001; Chua and Mahama, 2007; Mouritsen and Thrane, 2006). The ANT is different from other theories because it provides a

performative lens for the study of social relations, including relations between accounting and inter-organisational relationships (Mauritsen *et al.*, 2010).

Under the ANT, the role of inscriptions and calculations has been brought back as central to explaining the activities in an accounting study (Justesen and Mouritsen, 2011). Thus, it can be claimed that the ANT has resulted in a new setting for accounting studies. Rather than simply describing accounting numbers, the ANT focuses on the contribution of each actor in the network. The ANT assumes that a set of priors is not possible because identification of actors and their identity is made through the process of problematisation (Callon, 1986). The main focus of the ANT in accounting is not on generalisation (Mauritsen *et al.*, 2010), but more on the network that ties the surrounding accounting numbers to give colour and relevance. In other words, the ANT views accounting not merely as a tool used by managers but represents the knowledge that managers possess.

Under the ANT, the important elements are the actors and the interactions of actors in the network. The actors in the ANT can be human beings or non-humans, including text, money, institutions and natural entities (Callon, 1986); and they cannot be separated in analysis (Latour, 2005). Latour (1996) extended the actor to actant, which includes non-human, non-individuals and inanimate things. The interdependencies and connections among actors in a network are significant in the ANT. The assumption in the ANT is that the interactions among multiple actors with different interests, create the network (Muhammad Zawawi, 2016). In understanding the network, it is essential to study how the network is practically accomplished, how the boundary is settled, how the firm is defined, how transactions are fabricated and how the environment is stabilised (Mauritsen *et al.*, 2010). Thus, the identity of the actors cannot be studied without paying attention to the network through which their identities are defined (Chua and Mahama, 2007).

From an ANT performative perspective, the focal area is translation. In the ANT, actors become attached via the process of translation. Through the process of translation, the identity of the actors and the possibility of interactions are discovered (Callon, 1986). In Latour's study (1987), translation reflects how the interests of those who are attached to their networks are transformed into facts (Baxter and Chua, 2003). Latour (1999) defined translation as the displacement, drift, invention, mediation and the creation of a link that did not exist before. The process of translation appears in four moments proposed by Callon (1986): problematisation, interessement, enrolment and mobilisation.

Problematisation is a process of determining the set of actors and the identities of each actor, to establish an obligatory passage point (OPP) in the network of relationships. The OPP shows the clear relationship between actors, thus defining the identity and the interest of each actor involved in the relationship. The second moment of translation is interessement. Interessement is the group of actions imposed by the focal actors to stabilise the identity of other actors identified through problematisation. The importance of this moment is to lock other actors' roles in the network. As stated by Callon (1986, p. 9), "to interest other actors is to build devices which can be placed between them and all other entities who want to define their identities otherwise". The success of interessement validates the problematisation moment. The third moment, enrolment, is achieved when interessement is successful. Enrolment is the process of defining the interrelated roles and attributing to the actors who are in the network and accepting their roles. The enrolment of actors in the network is achieved through multilateral negotiations and trials of strengths and tricks during interessement. The final moment is mobilisation. Mobilisation is the process of identifying the spokesperson to represent the network. The spokesperson must be able to represent the network propositions and their representation must be stable (Muhammad Zawawi, 2016).

Translation is the process by which the differences among actors are ultimately reconciled and become stable. Thus, it is important to understand the variation of actors involved in the actor-network because it will affect the debates during translation. The different levels of actors will bring in different interests to the network. Therefore, the translation process requires intermediaries. Callon (1990, p. 134) defined an intermediary as anything (including scientific articles, computer software, disciplined human bodies, technical artefacts, instruments, contracts and money) that defines the relationship between actors. An intermediary can appear from a ready-made entity based on the identity and roles of the actors or from the inscribing process of an inscription (Muhammad Zawawi, 2016). Inscriptions serve as a medium of engagement between actors and stabilise the disagreement as the inscriptions continuously construct, localise and refresh the translation process (Emsley, 2008).

In the present study, the ANT is used to understand the translation process of the MCS of a privatised SWM towards creating a stable network. In other words, the use of the ANT can help to answer the questions of how a control system came into being; how the control system is maintained, modified or destroyed; and how the control system is enacted (Vosselman, 2012).

5. Research methodology

Qualitative research design of a single case study is used in the present study. The focus is to capture the circumstances and conditions of an everyday practice of using MCS in a privatised SWM in Malaysia. All parties or actors involved in the privatisation of the SWM process were identified and selected.

To get access to the case selected, the researcher contacted the Secretary General of the MUHLG, who was also the Chairman of Corporation X, requesting his consent to use Corporation X as the case for this study. Initially, a positive verbal response was received. Following this, the researcher sent a formal letter to the Chairman which was received and forwarded to the Director General of Department A and the chief executive officer (CEO) of Corporation X. The researcher then was invited to meet two officers at Department A, and another series of interviews took place.

To get the access to the private concession companies, the researcher sent a letter to the CEOs of the respective companies. Out of the three concessionaires, only one company, referred to as Champion, responded to the letter. Champion invited the researcher for an initial visit. Another two private concession companies did not give any positive feedback on the request despite multiple efforts made.

The data collection process was conducted from December 2015 until November 2017 and involved four stages. The first stage started with a preliminary study. After two preliminary visits, the second stage commenced with document review which lasted for almost one month. The researcher was allowed to review the following documents:

- operations manual (OM) 2014;
- concession agreement (CA);
- appendix to CA;
- guidelines for monitoring concession companies by Corporation X; and
- a few copies of minutes of meetings.

The researcher had no permission to photocopy the documents, and hence, all output from this stage was written in a diary.

Once completed, the researcher proceeded with the third stage of data collection, i.e. in-depth face-to-face interviews. To ensure accuracy, all interviews were recorded with

consent, whereby all participants were required to sign the consent form before the interview started. The study used open-ended questions to allow the participants to freely share their perceptions, experiences and beliefs of the MCS used in the process of SWM. The interview questions included general to specific issues in SWM. It started with several demographic questions, followed by questions on the interviewees' contribution to the process involved in a privatised SWM.

The interviews involved participants with different experiences and knowledge, from various agencies and management levels. Therefore, the use of semi-structured interviews was suitable. The interviewees were identified using the concept of "follow the actor", where the first interviewee was asked to name other important participants to be interviewed next. This was due to the situation where it was not easy to trace the personnel involved since the privatisation of SWM started way back in 2011. Furthermore, it is the government's policy to rotate staff after some time. Thus, "follow the actor" or referral participants was most appropriate.

In this study, 20 interviews were conducted. Each session took about 45 min to 2 h. To preserve anonymity, the real names of the participants were replaced with pseudonyms. Table 1 shows the list of participants:

In ensuring data quality, the fourth stage commenced, which involved the observation method. The purpose of conducting observation is to ensure the real-time events and natural settings are covered by the researcher, and to gain the insiders' understanding of how the process works without any influence from the researcher. Further, the process of

Agencies	Participants
Department A	(1) Former director general
	(2) Director, department of approval and licensing
	(3) Assistant director, privatisation unit, department of approval and licensing
Corporation X	(1) State director
	(2) Engineer (was a member of task force during early stage of privatisation)
	(3) Branch manager/enforcement officer
	(4) Head of enforcement and monitoring department
	(5) Enforcement assistant
Champion	(1) Chief executive officer
	(2) General manager
	(3) Head of operations and planning unit
	(4) Head of departments (two persons)
	(5) Manager for kedah and perlis
	(6) Head of quality improvement and technical audit
	(7) Head of branch/service unit manager
	(8) Supervisor
	(9) Executive officer
	(10) Sub-contractor officer (two persons)

Table 1.
List of participants

Source: Created by author

observation was used as a cross-check and to validate the data gained from interview and document review processes. Data gathered from the observation and document review were kept as handwritten notes (diary and typed documents).

The data gathered was analysed using thematic analysis. The thematic analysis used the following processes: the first step was the interviews were recorded with consent and subsequently transcribed manually. The purpose of this stage was to become more familiar with the data. The transcription process used unfocused transcription as suggested by Gibson and Brown (2009). The objective of unfocused transcription is to show the meaning of what was said by the participants. The participants' names were anonymised using pseudonyms. Two interview transcriptions were sent back to the participants for "members' checking" process; the second step was generating initial coding. As a start, the coding process was done using Atlas.ti, the computer assisted qualitative data analysis software (CAQDAS); the third step was the process of searching and reviewing the themes. This process was done manually by the researcher. At this stage, all codes generated by Atlas.ti were revised repeatedly to ensure that all transcriptions had been pooled into related themes. One transcription with the thematic analysis was reviewed by an experienced qualitative researcher for peer debriefing process; and the final step was to define and name the themes. After several repeated manual revisions of the themes that emerged from the codes generated by Atlas.ti, six final themes appeared.

6. Findings and discussion

6.1 Translation process of management control system in privatised solid waste management

A translation process is needed to create the actors' network and to enrol all actors into the network (Smith *et al.*, 2010). In the translation process, human and non-human actors negotiate to define their interests and actions in the network. The presentation of the findings is based on Michel Callon's four moments of translation: problematisation, interessement, enrolment and mobilisation.

6.1.1 Problematisation. This is the first moment of translation in which a set of actors is identified and their identities defined to establish themselves as an OPP in the network (Callon, 1986). The focal actor is responsible for determining other actors and their identities. In this study, there are several actors involved in the privatisation process.

The privatisation of SWM could only be implemented after the Act 672 was gazetted in 2007. After the enactment of Act 672, an agency had to be responsible to handle the privatisation process. Thus, Department A was established together with the enforcement of Act 672 in 2007. As mentioned by the Head of Department A:

> Department A drafted the Solid Waste Management and Public Cleansing Act. This is the first contribution from us [Department A] although there are also members from Corporation X. But we [Department A] are the organizer. Then, Department A also drafted a Tripartite Agreement. And the third is, the Department A involved in the preparation of concession agreement, then Department A also involved in preparation of the rules under Act.

Thus, Department A is the focal actor in this privatisation process. The responsibility of Department A is focused on policymaking. Another actor exists in the network, which is Corporation X. The responsibility of Corporation X is focused on monitoring and enforcing tasks. The establishment of Corporation X is under the Corporation of Solid Waste Management and Public Cleansing Act 2007 (Act 673). According to this Act, Corporation X does not have power at sole, but the power is delegated by the Head of Department A. The purpose of Corporation X's establishment is for the implementation, monitoring and management of the private concession companies.

The third actor involved in the process is the concession companies. The concession companies for privatisation are appointed according to zones: northern, southern and central zones. Hence, there are three concession companies involved in the privatisation process. However, in this study, only one concession company (Champion) was selected due to access limitation. All the work done by the Champion must be in accordance with the concessionaire agreement (CA). The CA details the responsibility of each party, i.e. Department A (representing the Government), Corporation X and the Champion.

Because many actors were involved, the main question of this study is, "How the focal actor controls the whole network in the implementation of the privatisation of SWM?". This is the problematisation related to this study. Figure 2 shows the OPP within the problematisation to achieve the target of the network.

6.1.2 Interessement. The second moment is interessement. Interessement is the group of actions by which an entity attempts to impose and stabilise the identity of other actors it defines through its problematisation (Callon, 1986, p. 203). This is the moment where the focal actor seeks to lock other actors into their identified roles (Smith *et al.*, 2010). In this study, the focal actor, Department A, used KPIs as the measurement that is placed on all actors. The KPIs are monetary based. According to the Branch Manager of Corporation X:

> When we closed the account at month end, all KPIs that charged to the Champion will be deducted from the amount they claimed on work done. Example, if they [Champion] claimed RM20,000, they have KPI of RM1,000, so the final payment from us [Corporation X] is RM19,000 only.

There are 75 KPIs set for the process, divided into 51 KPIs for public cleansing and 24 KPIs for collection of solid waste. There are two types of KPIs, which are primary KPIs and secondary KPIs. The primary KPIs is the main KPIs which is compulsory for the Champion to achieve. The fine charged for primary KPIs non-achievement is huge compared to

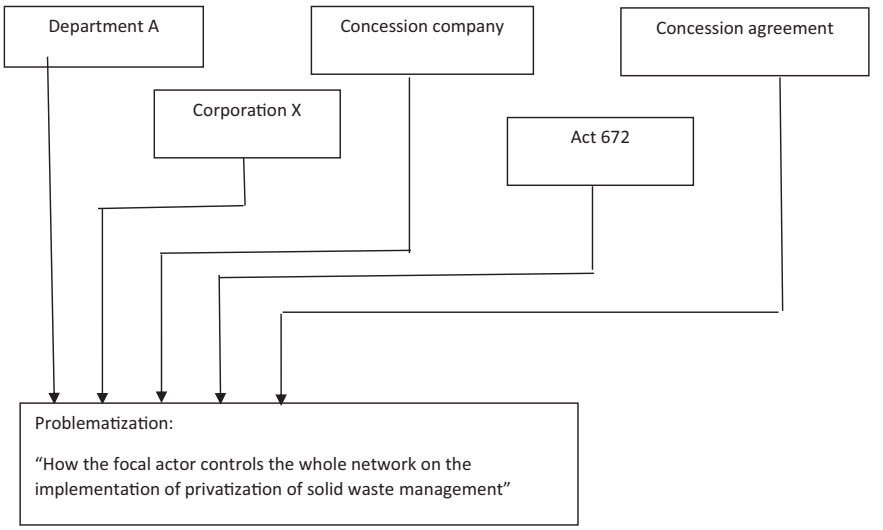


Figure 2.
Problematisation

Source: Created by author

secondary KPIs. The secondary KPIs is related to imperfect work done. In daily operations of SWM, KPIs are used as the measurement tool for Department A, Corporation X and the Champion.

From the perspective of each actor involved:

> KPI is part of the agreement, thus it is compulsory for the company [Champion] to comply. We [Department A] do not involved at site. We do not go to check their work at site because we have a monitoring agency [Corporation X] to do it. What we did is, we have two committees in concession agreement, where we asked the Corporation X to present the list of KPIs being charged to the company [Champion]. The presentation is more on to check their [Champion and Corporation X] performance, for us to monitor. Then, we will discuss with them the problems, if any, like misunderstanding of KPIs or argument on KPIs.
>
> Assistant Director, Department A.

> In the schedule submitted to us, they [Champion] already mentioned how many houses for waste collection. Let's say Taman A has 100 houses, Taman B has 50 houses. So, from that schedule, our enforcement officer will randomly check. Let say from the 100 houses at Taman A, he [enforcement officer from Corporation X] had checked for 3, 4 times and half of it is still not collected [household waste]. So, it confirmed that the lorry [Champion's lorry] did not come, right? So, we [Corporation X] monitor their [Champion] work from the number of houses. Just imagine if they [Champion] did not collect waste from these 100 houses, how many KPIs would we [Corporation X] charge them [Champion]?
>
> The Engineer of Corporation X.

> In terms of implementation, it's [KPIs] good. Except the enforcement, sometimes got hiccups because it's more on humans. In terms of the control system, it's really good, because many KPIs enforced. For instance, there are 6 to 8 primary KPIs, which will cause us trouble if being charged.
>
> The CEO of Champion.

6.1.3 Enrolment. Enrolment is the third moment in the sociology of translation. It is the process of defining the interrelated roles and aligning the interests of each actor. In this research, the enrolment process involved the process of preparation of the OM, the technology used and the meetings.

The OM is the document required by the CA to be prepared for every two years. The OM is used by all parties involved in the SWM operations, including the Champion and the appointed sub-contractor. The OM serves as the main reference for operation management staff to provide waste collection and public cleansing management services. The purpose of using the OM is to avoid non-compliance with the KPIs.

Technology plays an important role when it comes to the communication between actors involved in the SWM process. There are two levels of relationship in the process, known as internal relationship and external relationship. The internal relationship refers to the relationship between the Champion, branches and sub-contractors, while the external relationship refers to the relationship between Department A, Corporation X and the Champion. Each level of the relationship relies heavily on technology. For internal relationships, applications known as MResponse and AVLS systems are used. For external relationships, the technologies used are handheld devices and *i*-MEMS. The handheld device is the device used by the enforcement officers to perform their work on site. Every

enforcement officer is provided with one handheld device. On the other hand, *i*-MEMS is used for communication and monitoring between Corporation X and the Champion.

The system used in the process is explained as follows. At first, the enforcement officers are required to bring their handheld devices when they work on site. Should there arise any unsatisfactory works done by Champion, photographs are taken using the handheld devices. Once they go back to their office, the handheld devices are synced to a trader. Once synced, the data stored in the handheld devices is directly transferred to the *i*-MEMS system. The branch manager will then verify the KPIs in the *i*-MEMS, and the system will directly send the data to the Champion. All the KPIs can be viewed by the Champion using *i*-MEMS before 5 p.m. every day. The Champion is required to give feedback before 12 noon on the next day.

The final medium used for enrolment is meeting. Two committees are established under Act 672. The first one is the Regional Implementation Committee (RIC), whose members comprise the Corporation X's State Director, the Champion's service unit manager and representatives from local governments. The RIC meeting is chaired by the Corporation X's State Director. The frequency of this meeting is once a month. Normally, the issues discussed in RIC are operational issues, such as how to increase the frequency of waste collection, the submission of new areas to the Champion, complaints from local governments on the services provided by the Champion and most importantly, the discussion on KPIs charged to the Champion.

The second committee is the Service Level Committee (SLC). The SLC is a higher-level committee chaired by the Director General of Department A. Other members of the SLC are the CEO and staffs of the three concession companies, the Corporation X's State Directors, the secretary of the state government (SUK), Ministry of Finance, Public–Private Partnership Unit (UKAS) and Local Government Departments (JKT). The issues discussed in the SLC are policies and the decisions that have financial impact on the government. In the SLC, all the KPIs for each concession company will be tabled. The SLC must call for meetings at least three times in a year.

Other than that, meetings are held monthly to discuss the performance of the Champion. In addition to this, a meeting is held by the complaints committee to make sure that corrective actions have been taken against all complaints.

6.1.4 Mobilisation. The final moment of translation involves a process of mobilising passive actors into the network. In this study, the mobilisation process is done by the focal actor, Department A. Department A together with Corporation X, actively gives free awareness talks at kindergartens, mosques and housing areas. They also provide recycling cages at certain locations to help the public to manage their recycling items there. The main purpose is to create awareness and develop interest among the public on SWM.

The Champion is also involved in the mobilisation process. Currently there is one project conducted by the Champion, namely *MyKasih*. In this project, each person in the community is given a *MyKasih* card. Points are added to the card each time recycled items are sent. The points can be redeemed at selected supermarkets with the purchase of household items. So far, only Giant Hypermarket and CMart in Kulim, Kedah accept the redemption of *MyKasih* points. Moreover, the Champion is actively performing awareness campaigns for the community. They have a dedicated team namely, Kembara SAS, that actively assists in distributing flyers at night markets, Ramadhan markets, uptown, downtown and other places of public gatherings:

> We spend almost a million a year for awareness program.
>
> CEO of concession company.

The success of the mobilisation process in involving the community at kindergartens, mosques and housing areas is an indicator of the success of the process of translation of MCS in privatised SWM. Albu, Albu and Guinea (2020) mentioned that mobilisation is a process to prove that the system is already accepted by the actors and actors who come after them.

6.2 Stability of an actor-network

The aim of the translation process in a network is to reconcile the diverse interests of heterogeneous actors. In the privatisation of SWM network, translation has been successful because the focal actor can define and attribute interrelated roles to each actor to be accepted by them (Callon, 1986). This is an important point in the ANT, i.e. a successful actor-network that passes through the OPP becomes irreversibly entwined and the translated actors are mobilised to address the problematisation (Atkinson, 2002). This finding is consistent with Marques *et al.* (2011) who stated that public organisations which act as a network coordinator, seem to be shaped by their assessment of motivations to cooperate and of the contribution to network performance of the various organisations involved in the network.

An actor-network must be stable; thus, a coordinated strategy among actors in the network needs to be developed (Callon, 1986, 1990; Latour, 1987, 1996). In the current study, i.e. on the SWM network, the coordinated strategy is developed through the CA and KPIs. From the perspective of the ANT, the establishment of the Champion to act as the service provider on behalf of the government is a solution for the problems faced. The moment of problematisation defines the identities and roles of each actor involved in the network (Callon, 1986).

There are two relationships in the network, inter-organisational and intra-organisational. The findings of this study support that KPIs, as the main inscription, can influence the operations of both relationships, within Champion (intra-organisational) and between Champion and Corporation X and Department A (inter-organisational). This study finds that almost all operations at Champion are influenced by the network control (inscriptions). The finding contradicts Ahmad *et al.* (2020), who concluded that government agencies and private sector managers have a different perspective as to how accounting information can contribute to performance measures, with the former viewing accounting information primarily for bureaucratic control purposes for implementing government policies.

The findings prove that inscriptions used in the network can tie all actors to the alliance. For instance, Corporation X and Department A use KPIs to evaluate the performance of Champion. Payment for the services provided by the Champion is also based on KPIs. At Champion, KPIs are used for delivering all services assigned through the CA. To ensure understanding among their operation workers, the Champion has an OM, the contents of which are sourced from KPIs. The OM is prepared to simplify the KPIs language to make it understandable for all levels of staff that deliver the SWM services. The same KPIs imposed by the government are used for the selection of sub-contractors. During the selection process, all contractors who apply for sub-contractor posts will be briefed on the KPI targets. The main contract-awarding criterion is ability to comply with the KPIs. In conclusion, all processes at Department A, Corporation X and Champion are based on KPIs.

Siti-Nabiha and Scapens (2006) postulated that in an institution, accounting can be institutionalised ceremonially or instrumentally. In this study, the results confirm that in the privatisation of SWM services, KPIs are used instrumentally in the network. This study's finding is not in tandem with Siti-Nabiha and Scapens (2006), who attested that KPIs are produced just for the sake of ceremony, reported for the sake of reporting and do not

influence the day-to-day activities and decisions. Nonetheless, they concurred that change is necessary to maintain organisational stability.

A network must provide comprehensive guidelines to influence the actions of actors in the network, so as to prevent risks to the network (Kakabadse and Kakabadse, 2000; Dekker, 2004). Further, it is important to have a control system especially during contract procurement and early implementation phases to develop trust (Ahmad *et al.*, 2020). In this study, the successful translation process demonstrates that the inscriptions are complete, hence creating stability of the network. The finding of this study is in tandem with Aman *et al.* (2012) who found that contract management is important to mitigate transaction costs in an outsourcing relationship.

6.3 Key performance indicators as control mechanism in privatised solid waste management network

The KPIs serve as the only formal medium of governing relationships in the network. The services delivered to the public must be in accordance with the standards specified in the CA and must comply with the KPIs mentioned in the Appendix to the CA. Thus, KPIs must be understood by all parties involved in the SWM network to ensure the efficiency and effectiveness of services delivered.

The purpose of using KPIs is for uniformity purposes. Before privatisation, each local government had their own way of handling solid waste. This situation inhibits uniformity in the services provided by the local governments. The service recipients, i.e. the Malaysian citizens, pay the same assessment taxes to their respective local governments, but then services provided vary between one local government and another. Therefore, it is the intention of the government to provide equal SWM services to all states in Malaysia, which the government has achieved through KPIs. There are two implications of KPIs. First is the penalty and the other is the deduction of payment. Thus, it is important to ensure that all actors involved in SWM understand and are clear regarding each KPI used in the network, because double penalties will be imposed due to non-compliance of KPIs.

KPIs play the role as a network control mechanism which is based on a monetary based performance indicator. The KPIs are linked to the performance of the Champion. A monthly meeting, known as concession meeting, is held between the Champion and the Corporation X, where the total KPIs charged to the Champion will be presented by the Corporation X. If the number of KPIs is less, then they are considered good. Each KPI charged to the Champion can be negotiated, but only the State Director of the Corporation X has the authority to accept or reject the final decision. All KPIs charged to the Champion are accumulated, and at the end of the month, the Corporation X, who is the paymaster, will deduct the amount from the total payment claimed by the Champion. When the total KPIs reaches a certain limit, the Corporation X will issue a reminder and suggest termination which will be sent to the Department A. The Department A has the authority to terminate any contract with a concession company. That is how KPIs play the role as network controls. The above findings on the important roles of KPIs are in line with the study by Amos *et al.* (2020).

7. Implications, limitations and suggestions for future studies

The current study shows the translation process towards creating a stable network in a SWM control system. From the lens of the ANT, actor-network is reflected in the relationship between Champion and other parties, including government and non-government agencies involved in SWM. The CA is an intermediary in this relationship, together with KPIs, serving as inscriptions. Through the CA, Champion have been given the

right to provide SWM services in Malaysia. The services delivered by the Champion must comply with the standards stipulated by the government. The standards are translated into KPIs. Hence, the performance of the Champion is evaluated based on KPIs. That situation creates the need for KPIs to be comprehensible to all parties involved in the SWM network to ensure the efficiency and effectiveness of services delivered.

Under the ANT, inscriptions are theorised as immutable and mobile to allow information transfer across organisational boundaries. In this study, most of the activities in intra-organisational relationship are sourced from the inter-organisational relationship. Results and action controls used by Champion are all based on KPIs and CA, which are the main inscriptions in the inter-organisational relationship. KPIs play the role as network control mechanism based on the monetary performance indicator. The KPIs are linked to the performance of the Champion. This situation proves the ability of network inscriptions to bring stability to the network. Further, the use of guidelines, i.e. CA, KPIs and public policies i.e. ABC Plan, NSP for SWM and NWM Plan, also contribute to the stability of the SWM network. Clear, understandable and comprehensive guidelines and public policies used in the network create a better understanding of the roles assigned to each actor in the network, identified by the focal actor during problematisation moment, hence contributing to network stability.

The current study makes a case by which the ANT can explain the dynamics of inter-organisational relationships and management control mechanisms. The current study explains that the main inscriptions, which are KPIs and CA, are used instrumentally to create stability of the network. The KPIs act from a distance to drive and monitor the activities involved in the SWM network. The findings of this study show how the management control mechanisms (the inscriptions) used in an inter-organisational setting, influence its operations, hence creating stability of the network. This supports the claim that inscriptions have been brought back as the central object in inter-organisational relationships (Justesen and Mouritsen, 2011).

Further, the findings of the study suggest that the translation process does not stop after the management control mechanisms have been institutionalised. Rather, the translation process continues, and it transforms the mechanisms that were originally predicted. For instance, inventories which is initially used as control mechanisms based on the lump sum amount given by the local government during the early process of privatisation of SWM, have changed to be based on GIS data after the translation process has occurred. Further, the inscriptions in this study are translated by actors via meetings and the technology. This situation explains how the inscriptions in action create a positive impact on the network, which then leads to its stability. This is inconsistent with the claim made by Justesen and Mouritsen (2011) that researchers do not continue to investigate after the new accounting technology became institutionalised in the centre of calculation.

In addition, the present study proves that non-human actors have a positive influence in shaping inter-organisational relationships that bring about stability to the network. In the SWM network, KPIs which are non-human actors, appear in all inter- and intra-relationships as mediators that provide stability and tie each actor to the network. This finding is contrary to the claim that only human actors can bring non-human actors into circulation of the system (Roy, 2015).

There are several limitations of the study. The first limitation is related to the access given. As the scope of the current study is on government relationships, there are many documents, procedures and accesses that are private and confidential. This is the reason for the low number of participants, low number of document reviews and the absence of managerial meeting observation. Further, it was difficult to contact the person-in-charge during the early process of privatisation. In government agencies in Malaysia, it is a normal

practice to transfer employees after certain years of service to other departments, branches and even, to other states. Hence, it was hard to fix an interview with those who had been transferred to a different department with different roles and responsibilities. In addition, many had retired.

The findings of this study could provide several insights for future studies. SWM in Malaysia has been privatised for 22 years, with a seven-year cycle. Thus, a longitudinal study can be conducted in future to understand the management control used in every cycle and make comparisons on the change of control system used. Furthermore, the concession has been awarded to three concession companies. However, due to the limitation of access given to the researcher, the present study only focused on Champion. Thus, future investigation is suggested to study the differences and similarities of KPIs implementation among the three concession companies. This is because each concession company provides services to different locations with different area sizes. In addition, the contents of the CA signed between each concession company and the government is different. Furthermore, in government agencies, it is a normal practice to change the management team, especially the director, after several years. It might also be due to retirement or promotion. A different management team may influence the style of conducting the relationship between agencies. Thus, future studies might be interested to investigate the impact of change of management teams on the relationship between government and private concessionaires.

Despite the limitations, the present study is useful as evidence that most of the activities in intra-organisational relationships are sourced from inter-organisational relationships and comprehensive KPIs, guidelines and public policies to contribute to network stability.

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