IT Governance Practices

A Multiple Case Study of Tanzanian Public Government Organisations
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Master Thesis in Informatics

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Abstract

Previous studies have been done on various aspects of IT governance in public government organisations in developing countries and revealed several key issues. However, due to limited knowledge, it is unclear what IT Governance (ITG) practices are in place within public organisations. The purpose of this study is therefore to explore the adopted IT governance practices and their influence on the effectiveness of IT governance in Tanzanian public government organisations. A qualitative study was done using the holistic multiple case study strategy. Data was collected using the semi-structured interview method with heads of IT in three Tanzanian public government organisations. The analysis of this study revealed that senior managers involvement in IT projects, office of CIO and the IT leadership are key ITG practices adopted in the three Tanzanian public government organisations. The senior managers involvement in IT projects was found to have influence on knowledge sharing through collaboration between IT and business units. Moreover, the office of the CIO was found to have influence on organisational decision making through direct representation to the decision body by a person who oversee and issues IT directives. Further, the IT leadership was found to have influence on facilitating knowledge sharing between IT and business units as well as overseeing IT matters and issuing IT directives in the organisation. Given these findings, our study contributes knowledge into the literature on IT governance with special emphasis on governmental organisations in developing countries.
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List of Abbreviations

CIO  Chief information officer
CMT  Council management team
e-GA  Tanzania e-Government Agency
HICT  Head of Information and Communication Technology Department
ICT  Information and Communication Technology
IT  Information Technology
ITG  Information Technology Governance
ITGI  Information Technology Governance Institute
ITO  Information Technology Officer
MC  Municipal Council
NICTBB  Tanzania National Information and Communication Technology Backbone
UWASA  Urban Water Supply and Sanitation Authority
Tanzania  United Republic of Tanzania
TPSRS  Tanzania Public Service Recruitment Secretariat
UN/DESA  United Nations Secretariat Department of Economic and Social Affairs
1. Introduction

This chapter provides an introduction on the topic of IT Governance practices by presenting a detailed background and problem statement of the study, together with the research purpose. After that, research questions, delimitations and definitions are stated in this section.

1.1. Background

IT Governance has been a remarkable topic for decades in academic and business industries and to the researchers and IT practitioners. This area is still continuously holding undiscovered knowledge that is making it a poorly understood phenomenon and increases unclear understanding complexity. However, several studies have discussed various issues related to IT Governance (ITG) since the introduction of the first computers and IT investments in organisations (Lunardi et al., 2016).

Even though IT Governance is not a new topic in many different types of organisations, either private or public ones, its adoption still lags behind especially in public government organisations based in developing countries (Lin et al., 2010; Al Qassimi and Rusu, 2015). Yet, several studies have been done and discussed various issues related to the IT Governance including its effectiveness, success, difficulties, etc. (Huang, Zmud and Price, 2010; Nfuka and Rusu, 2011; Al Qassimi and Rusu, 2015).

A previous study revealed that IT Governance practices once adopted and implemented may facilitate the IT-business strategic alignment and it might have influence on the use of IT in an organisation (Wiedenhoft, Luciano and Magnagnagno, 2017). The IT Governance Practices are defined as “the arrangements and practices responsible for meeting the objectives and respecting the principles of IT Governance” (Wiedenhoft et al., 2017, p. 72). According to Chong and Duong (2017), there are three types of ITG practices: (1) Structural practices which are about IT decision-making rights and responsibilities, (2) Process practices that are concerned about IT infrastructure requirements, and (3) Relational practices that are concerned about IT and organisational leadership.
Moreover, with the support of IT Governance practices IT resources might be assured to be used responsibly, together with IT risks being appropriately and sustainably managed (Wiedenhoft, Luciano & Magnagnagno, 2017).

The adoption of Information Technology Governance (ITG) practices in any organisation might be considered as the means to meet the expectations of top management with the use of IT (Prasad, Heales & Green, 2010). According to Wiedenhoft et al. (2017), ITG practices are perceived to be influential in the implementation of different projects by ensuring not only the transparency related to the financial information of organisations, but also their entire management practices by responding to the stakeholders’ demands.

Basically, the organisation may create its business value through adoption and implementation of ITG practices which have influence to ITG of the organisation (Rivera-Ruiz & Ferrer-Moreno, 2015). The organisation is expected to select and implement ITG practices which are applicable and influential to the effectiveness of ITG in its working environment. The adoption and implementation of ITG practices is still behind in public government organisation in the perspective of developing countries (Lin et al., 2010; Nfuka & Rusu, 2010; Al Qassimi & Rusu, 2015; Wiedenhoft et al., 2017). In other words, public organisations still lags behind when embracing IT Governance practices and yet in Tanzania being among developing countries adopting IT Governance practices, their influence on effective IT Governance remains unknown.

In this thesis, the research is based on a holistic multiple case study approach involving Tanzanian public government organisations with different roles in the country. The study mainly aims to fill the knowledge gap of IT Governance, more specifically the ITG practices adopted and their influence on effective IT Governance in public government organisations.

1.2. Problem Statement

Brown (1997), in his research on hybrid information system governance adoption stated that, the importance and applicability of Information Technology Governance started to be discussed in the late 1980s. The discussion lead ITG to be realised as important whereby its adoption and using it in the business process was first emerged in 1990's in private organisations as the means of facilitating IT-business alignment (Qassimi & Rusu, 2015). Since then, the field has attracted many researchers and various studies have been
done on how IT governance can be effective in different perspective such as relations, processes, and structures (Huang et al., 2010).

Previous research suggested that the adoption and implementation of ITG practices might be beneficial to the organisation, because the organisation may use its IT resources to achieve its business strategic goal (Weill & Ross, 2004). The organisation with effective IT governance may create business value and contribute its organisational performance (Weill & Ross, 2004). Moreover, regarding business value creation, Lunardi et al. (2016) suggested that organisations may consider and implement various ITG practices which are influential to the effectiveness of ITG of a specific organisation. Despite of the revealed beneficial role played by ITG practices in organisational performance, the adopted ITG practices and their influence on the effectiveness of ITG in public government organisation in developing countries is still unknown. However, Agarwal and Sambamurthry (2002) suggested that the IT governance model in an organisation should fit its working environment. In the field of ITG much research has been done in private organisations with less attention to public organisations (Al Qassimi & Rusu, 2015; Dawson, Denford, Williams, Preston & Desouza, 2017; Tonelli, Bermejo, Zuppo & Zambalde, 2015). Therefore, since ITG model must fit the organisation’s working environment and much research has been done in private organisation, this leads to a need to understand ITG practices in the perspective of public organisations.

Despite of less research attention to the public organisation also, little research has been done in identifying the adopted ITG practices and their influence on the effectiveness of ITG in developing countries (Al Qassimi & Rusu, 2015; Nakabi et al., 2017). The less research attention to the public organisation and developing countries has created a knowledge gap in understanding the insight from public organisation in developing countries. Therefore, this study aimed to fill the noted theoretical knowledge gap by coming up with current insights addressing ITG practices and their influence on the effectiveness of ITG from developing countries, more specifically looking at the adopted ITG practices from the perspective of Tanzanian public governmental organisations.

According to UN/DESA (2015), Tanzania is among the developing countries located in the eastern part of Africa continent. In Tanzania, there has been various ICT initiative pioneered by its government with the purpose to extend service delivery using IT. In 2012, the government of Tanzania decided to inaugurate its agency which deals with all matters related with e-Government initiatives within Tanzania (eGA, 2018). In addition,
the government of Tanzania implemented the fibre optic cable network across all cities and districts, which serves as the Tanzanian National ICT Broadband Backbone (NICTBB, 2018). In extending its service delivery using IT, the government of Tanzania has implemented various e-government projects, some of the e-government projects are local government revenue collection system, basic education management information system, and a public service recruitment portal. This IT initiative by the government of Tanzania suggests that the government of Tanzania recognises the role of IT in its service delivery.

To conclude, the statements drawn in this section motivated this study to include Tanzania as the case study country from developing countries whereby the public government organisation was considered as the empirical organisation for exploring adopted ITG practices and their influence on the effective ITG.

1.3. Purpose of the Study

The purpose of this thesis is to explore the adoption of IT Governance practices in the context of Tanzania governmental public organisations. Therefore, this study aims to gain more knowledge on IT Governance practices adopted in developing countries especially in governmental public organisations.

1.4. Research questions

To understand the currently adopted ITG practices and their influence on the effectiveness of IT governance in public government organisations, the study has two research questions.

1. What are the adopted IT Governance practices influencing effective IT Governance in Tanzanian Government public organisations?
2. How can the adopted IT Governance practices influence effective IT Governance in Tanzanian Government public organisations?

1.5. Delimitations

The aim of this study is to cover only Public government organisation in Tanzania. Therefore, among the existing government organisation in Tanzania, the study is based on three organisations playing different roles in Tanzania. Furthermore, the respondents of this study are IT practitioners in their respective organisations. In addition, the study will not investigate effectiveness of IT Governance, in other words, we are not intending
to measure effectiveness of IT Governance, but we are exploring the adopted IT Governance practices that influence effective IT Governance. Moreover, the study will not address issues related to e-government. Definitions

**IT Governance**: According to Lin et al. (2010), there are several definitions of IT governance even though the commonly recognized ones are only those provided by IT Governance Institute (ITGI), the AS8015-2005 Australian Standard for Corporate Governance of Information and Communication Technology (ICT), and various definitions presented by Weill and Ross (2004). Therefore, "IT governance is concerned about the deployment of IT resources in alignment with organisational strategies and objectives, the performance of IT in relation to value delivery and risk mitigation, and the conformance of IT processes to best practices" (Lin et al., 2010, p. 44). In addition, "IT governance: Specifying the decision rights and accountability framework to encourage desirable behaviour in the use of IT" (Weill & Ross, 2004, p. 2). Specifically, IT Governance is centred on five different domains: Strategic Alignment, Resource Management, Risk Management, Performance Measurement and Value Delivery (Lin et al., 2010).

**IT Governance Practices**: are defined as “the arrangements and practices responsible for meeting the objectives and respecting the principles of IT Governance” (Wiedenhoft et al., 2017, p. 72). According to Chong and Duong (2017), they are three types of ITG practices: (1) Structural practices which are about IT decision-making rights and responsibilities, (2) Process practices that are concerned about IT infrastructure requirements, and (3) Relational practices that are concerned about IT and organisational leadership.

**Public organisation**: “public sector organisations are a collection of a nation’s administrative and economic institutions that provide services and goods for and on behalf of the government” (Campbell, McDonald & Sethibe, 2010, p.7). Therefore, in this study public organisations are considered as government-owned organisations.

**Effective ITG**: Refers to positive contribution by IT to the overall organisational performance (Ferguson, Green, Vaswani & Wu, 2013).
2. Theoretical Framework

The purpose of this chapter is to provide the theoretical background to the topic based on previous studies and a research model is provided. Various concepts are discussed, and the argument is based on previous studies. We reviewed previous studies on IT Governance, IT Governance in Public organisations and IT Governance Practices.

The theoretical research model used in this study as shown in figure 2.1, included structure, process and relational ITG practices. This research model is in line with Bianchi and Sousa (2016), that an effective IT governance framework must include structure, process and relational ITG practices. The ITG practices used in the research model of this study were selected from previous studies as shown in table 2.1. In a literature review, the ITG practices in the research model was found to be most discussed compared to other ITG practices. Therefore, as they are being widely discussed in previous studies, this motivated us to validate them empirically. Further, the ITG practices involved in this study, makes this research model different from other models in previous studies. In the delimitation section of this research, it was stated the intention of this study is not to measure the effectiveness of ITG but to understand the adoption of ITG practices and their influence on the effective IT Governance.

Figure 2.1: Research model

<table>
<thead>
<tr>
<th>IT Governance Practices</th>
<th>Influence</th>
<th>Effective IT Governance</th>
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<tbody>
<tr>
<td><strong>Structure Practice</strong></td>
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<tr>
<td>Senior managers involvement in IT</td>
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<td>IT steering committee</td>
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<td>IT strategy committee</td>
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<tr>
<td><strong>Process Practice</strong></td>
<td></td>
<td></td>
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<tr>
<td>ITG Frameworks</td>
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<tr>
<td><strong>Relational Practice</strong></td>
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<tr>
<td>Office of CIO or ITG</td>
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<td>IT leadership</td>
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</table>
2.1. IT Governance

A recent study revealed that there is a clear connection between Corporate Governance and IT performance (Wiedenhoft et al., 2017). However, large organisations including audit firms in the 2000s, criticized the effectiveness of management methods based on performance perspective (Wiedenhoft et al., 2017). Instead, it triggered the need to consider ethical principles and transparency for management issues in relation to the key stakeholders (Wiedenhoft et al., 2017).

According to Mueller (2013), organisations are required to focus on several issues when they think to adopt principles such as transparency, fairness and accountability in its environment. The involvement of IT being used in business processes in an organisation, its infrastructure, processes and procedures need to be analysed to ensure that they can align with its principles (Mueller, 2013).

Other studies emphasized that responsibilities of IT Governance form part of the Corporate Governance, such as guiding and reviewing organisational strategies, defining and controlling the managerial goals and objectives, ensuring the integrity of the organisation’s systems and respect for the principles of Corporate Governance (Hardy, 2006). Since IT governance is under corporate governance, the organisation’s information should be seen as an asset like all other assets that need to be managed for the interest of the organisation (Weill & Ross, 2004).

In an organisation the IT Governance has a role of directing and facilitating IT operation through its practices which are structures, processes and the relational practices (Sambamurthy & Zmud, 1999). In its role the IT governance will ensures that IT is aligned with the business and the organisation is likely to create value from its business. Therefore, IT resources and risks will be well managed and the performance is expected to be improved when considering the IT governance roles and management of IT projects (Wiedenhoft et al., 2017).

Effective IT Governance is enabled by applying ITG practices, even though it is confusing and sometimes quite difficult in making choices among a big number of available practices (Almeida, Pereira, Da Silva & Miguel Mira, 2013). However, previous studies have been conducted on IT Governance practices and highlighted the most commonly used ITG practices for IT Governance implementation (Almeida et al., 2013; Bianchi, Sousa, Pereira & Hillegersberg, 2017).
2.2. IT Governance in Public Organisations

In public organisations, Information Technology Governance is applied and used to enhance the organisational business values (Dawson et al., 2017). In public organisations, IT can be rolled out successfully by considering ideas of public values, IT Governance practices and the engaging administrative procedures (Bermejo, Tonelli & Zambalde, 2014). According to Dawson et al. (2017), the ITG governance practices are perceived to be influential to the effectiveness of IT governance in an organisation. However, a previous research revealed that in public governmental organisations there exist an intentional adoption of ITG practices (Al Qassimi & Rusu, 2015). Thus, in an organisation where there is unintentional decisions it is likely that the IT activities also will face challenges in aligning to business process.

The previous research by Ali and Green (2007) revealed that among the existing ITG practices the communicational systems and IT strategical committee practices have positive influence on the effectiveness of ITG in public organisations. It means that these practices once implemented in an organisation, makes it possible for the organisation to create business value as well as that performance might be enhanced. Further, the public organisation can take into consideration the investment portfolio management practices when they need to assess the impact of IT steering committee and solution manager practices on the effectiveness of ITG (Heindrickson & Santos Jr, 2014). In this scenario, the investment portfolio management practice has higher influence and it is influential even to other ITG practices.

When the process and structural practices are implemented with presence of proper ITG frameworks, the public organisation may get organisational benefit such as the enhanced working system and the potentiality of employee to increase (Sunthonwutinun & Chooprayoon, 2017). The perceived benefit may lead to enhanced IT performance of the organisation whereby it may influence higher organisational performance (Tonelli et al., 2015). Moreover, the ITG practices such as IT steering committee were perceived to have negative influence on the effectiveness of ITG in public organisation (Santos & Santos Jr, 2017). Thus, this shows that not all ITG practices have positive influence in every organisation. When they are not influential it means that they do not have any impact to the organisational business as well as performance.

However, the adopted ITG practices are not completely adopted among the public government organisations, are mostly in the early stages (Nakabi et al., 2017). Despite
being in the early stages, the ITG structural practices are implemented in most organisations, while the relational and process practices are not implemented (Nakabi et al., 2017). This reflects that the structural practices seem to be easy to implement because its components depend on the organisational structure. In this scenario the structural practices are like a default practices organisations can have, while process and relational practices need organisations to change perceptions to adopt them.

To conclude, previous studies explored ITG practices which are influential to the effectiveness of ITG. However, these practices are not common among organisations, which means that their adoption depends on the organisation’s selection decisions.

2.3. IT Governance Practices

DeHaes and VanGrembergen (2004) discussed that an organisation can implement ITG governance by adopting the structure, process and relational practices in its environment. However, these practices are of various types, an assessment is needed before adopting ITG practices, and the assessment will facilitate in selecting a best fit practices as per organisational environment (DeHaes & VanGrembergen, 2004). This composition of ITG practices has lead the implementation of ITG to be complicated and entailed the ITG frameworks to be in place, as these frameworks are referred to as a procedure guide in implementing IT activities (Altemimi & Zakaria, 2015). The recent research by Lunardi et al.(2016) agree with the research done by Altemimi and Zakaria (2015) and DeHaes and VanGrembergen (2004) that the implementation of IT governance in an organisation has to take into consideration and combine the structure, process and relational practices.

A recent study by Wiedemann (2018) revealed that when implementing software development projects using the agile method approach, the ITG practices have a positive influence on the development and operation groups, popularly known as DevOps groups. Further, Lunardi et al.(2016) in their research discovered that ITG practices have a positive influence to the five domains of IT governance in an organisation. Similarly, the empirical evidence revealed that ITG practices are influential on the effectiveness of IT governance in an organisation (Heindrickson & Santos Jr, 2014). Thus, this shows that the adoption and implementation of ITG practices is influential to the effectiveness of ITG within the organisation which might lead the organisation to create business value using IT.
To sum up, the previous research revealed that ITG practices are categorized into structure, process, and relational practices. The organisational thinking to implement IT governance in its environment is advised to consider a mixture of all three categories of ITG practices. However, these ITG practices’ adoption differ from one organisation to another, which makes the adoption dynamic. Table 2.1 shows the most used ITG practices, which were noted from the literature review done in this thesis.

*Table 2.1: The most used ITG Practices*

<table>
<thead>
<tr>
<th>Author</th>
<th>ITG Practices</th>
<th>Structures practice</th>
<th>Process practice</th>
<th>Relational practice</th>
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<tbody>
<tr>
<td>Ferguson et al., 2013</td>
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<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>(Bianchi, Sousa, &amp; Hillegersberg, 2017)</td>
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<td>Almeida et al., 2013</td>
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<td>Tonelli et al., 2015</td>
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<tr>
<td>Bianchi &amp; Sousa, 2016</td>
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<td>x</td>
<td>x</td>
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<tr>
<td>DeHaes &amp; VanGrembergen, 2004</td>
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<tr>
<td>Heindrickson &amp; Santos Jr, 2014</td>
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<tr>
<td>Ali, 2006</td>
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<tr>
<td>Vatanasakdakul, Aoun &amp; Chen, 2017</td>
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<td>Ali &amp; Green, 2009</td>
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<td>(Cobanoglu, Ayoun, Connolly, &amp; Nusair, 2013)</td>
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<td>Bradley et al., 2012</td>
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<td>Smith, Bradley, Bichescu &amp; Tremblay, 2013</td>
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<td>Zafar, Ko &amp; Osei-Bryson, 2016</td>
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<tr>
<td>Banker, Hu, Pavlou &amp; Luftman, 2011</td>
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1= Senior Managers Involvement in Information Technology; 2= IT steering committee; 3= IT strategy committee; 4= ITG Frameworks; 5= Office of CIO or ITG; 6= IT leadership.
2.3.1 Structure Practice

The structure practice deals with defining roles and responsibilities in an organisation (Bianchi et al., 2017). The organisation is responsible to define the roles and responsibilities of its established structure, whereby the defined roles are responsible for the implementation of ITG according to their responsibilities assigned.

The main idea of structure practices is to facilitate the organisation to have the best IT procedures in place for the management of ITG domains. These procedures once implemented will enhance techniques for effective processes implementation (Chong & Duong, 2017). It means that the structure practices provide a basis for implementing other practices, through their facilitation the relational and process practices can be implemented. The structure practices are recognized and are formal within the organisation, among others they facilitate horizontal communication between business and IT (Dehaes & VanGrembergen, 2008). The defined responsibilities will determine which organisational members will be interacting with each other when they implement tasks according to the responsibility assigned. On the other hand, an organisation may adopt and implement the ITG framework but the framework should respond to the structural questions such as “who will make a decision” and “who will be involved” (Vesjseli & Rossmann, 2017). This shows that structure practices are a part of the decision making whereby the organisation must define its responsibilities according to the roles.

Therefore, this reveals that in an organisation the structural practices are formal whereby the organisation must define their roles and responsibilities. According to the responsibilities assigned they are involved in decision making in their respective role. However, there exist several structural practices which are influential on effective ITG.

a) Information Technology Steering Committee

The Information Technology steering committee is a structure practice which involve representatives who are heads of departments within the organisation (Cobanoglu et al., 2013). The organisation is responsible in establishing this committee (Heindrickson & Santos Jr, 2014). This means that this committee is officially recognized, as the business and IT executives meet and develop a common understanding on the matters related to their IT/business alignment.
The responsibility of this committee is to set the IT and business alignment strategic goals for business deliverables (Cobanoglu et al., 2013). Also, it is responsible for choosing and prioritizing IT projects according to business goals (Heindrickson & Santos Jr, 2014). Moreover, the IT steering committee is responsible for approving new IT projects and evaluation of the strategic alignment between business and IT. Their responsibility extend to facilitating and securing funds to run the proposed projects (Heindrickson & Santos Jr, 2014).

This committee is involved in the planning process of IT-business strategic alignment of the proposed projects (Bianchi & Sousa, 2016; Ferguson et al., 2013). Its composition of heads of departments who are decision makers in their respective department makes this committee influential to the implementation of IT activities. Apart from that, this committee helps to enhance transparent and accountability when implementing IT-business alignment as well as championing project implementation awareness among the business units and creates new mindset to the organisation (Cobanoglu et al., 2013).

Therefore, the previous study on the effectiveness of IT governance revealed that the IT steering committee has a positive influence on the effectiveness IT governance in an organisation (Ali & Green, 2007; Cobanoglu et al., 2013; Ferguson et al., 2013). To sum up, the composition of this committee which involve decision makers from various business units/departments is influential to the effectiveness of IT governance within the organisation.

b) Information Technology Strategy Committee

The Information Technology strategy committee is a structure practice which is a subcommittee of the Information technology steering committee with the purpose of advising the steering committee and follow up decision made by the steering committee (Ali & Green, 2007). It means that at first the steering committee makes decisions on the agreed matters. After that, it is the time for this committee to follow up the decision according to their expertise on the implementation status.

Further, the strategy committee through their expertise from their business units are responsible to take care and ensure that all matters related to IT-business strategic alignment are adhered (Bianchi & Sousa, 2016). This means to benchmark the compliance of strategy goals, monitoring the IT-business value creation to the organisation as well as to inform the head of department regarding project
implementation status (ITGI, 2003). Apart from that, this committee is responsible to ensure that strategic IT-business alignment is part of management meeting agendas. This is achieved by working close with the steering committee who are decision makers (DeHaes & VanGrembergen, 2004).

The involvement and participation of the IT strategy committee in various strategic projects it implies that, this committee is influential to the effectiveness of IT governance in an organisation (Ali, 2006). Thus, their involvement in advising and making a close follow-up regarding the decision made by the IT steering committee makes it to be influential to the organisation because their advice can have impact on the successfulness of the IT projects.

Previous research revealed that the IT strategy committee has positive influence on the effectiveness of IT governance in an organisation (Ali, 2006; Ali & Green, 2007). To sum up, the task performed by this committee with the focus of strategic IT-business alignment, makes it influential to create effectiveness from IT governance.

c) Senior Managers Involvement in Information Technology

This is a structure practice whereby the senior managers in an organisation are involved and provide support in IT activities when implementing IT governance tasks (Ferguson et al., 2013). This practice entails the collaboration working style among staff in an organisation in achieving a strategic business goal. Effective IT governance and higher organisational performance can be attained in an organisation if the organisation involve its senior manager in IT activities on a regular basis (Ali & Green, 2009). The senior managers’ involvement in a routine will facilitate and ensure that the strategic alignment between business and IT is maintained. That is, their involvement acts as an incentive to junior staff in performing information sharing with their senior colleagues within the organisation (Ferguson et al., 2013).

Previous research revealed that that senior managers involvement in IT activities has a positive influence on the effectiveness of ITG (Ali, 2006). Also, the involvement of senior officers has a positive influence on the performance of the organisation and the effectiveness of IT (Vatanasakdakul et al., 2017). To sum up, the involvement of senior managers in IT activities is influential to the effective IT governance in the matter of a collaborative work style and information sharing through their work experience.
2.3.2 Process Practice

Process practice refers to formal processes for ensuring that daily behaviors are consistent with IT policies and provide input back to decisions. Some of them are ITG frameworks, IT investment proposal, architecture exception processes, strategic information system planning, and chargebacks (Almeida et al., 2013). Thus, in this section only ITG framework practice were reviewed.

a) ITG Frameworks

The ITG frameworks are considered as the core of IT Governance practices since the studies found in the literature show that frameworks such as ITIL, COBIT or ISO/IEC 38500 are recommended as a starting point for IT Governance implementation (Bianchi et al., 2017). Therefore, organisations that effectively practice IT Governance are expected to be familiar with various ITG frameworks adoption.

2.3.3 Relational Practice

This practices refers to active cooperation and engagement between IT and the business as well as other stakeholders of the organisation, which cooperation is voluntary (Peterson, 2004). The effectiveness of IT in an organisation is attained when there is cooperation between IT and business units whereby through active cooperation the organisation can realise the functioning of its structure and process practices (DeHaes & VanGrembergen, 2004). To attain and sustain business IT alignment in an organisation, the need to adopt practices like announcements, advocates, channels and education efforts are recommended to organisations (Almeida et al., 2013).

The previous research by Chong and Duong (2017) revealed that the relational practices are necessary to be taken into consideration during the beginning of planning and implementation of IT projects. The success of the project is likely to be attained because of the existence of cooperation, awareness and a mutual understanding between the IT and business. Therefore, in this section, we review some of the relational practices that are mostly used in IT Governance implementation.

a) Office of CIO or ITG

Office of CIO is a relational practice which refers to structural power and the importance the organisation has given to IT in its decision bodies. This power must be included in
the organisational structure (Shao, Wang & Feng, 2016). When there is an office of CIO or ITG it means that the organisation has authorised the CIO to participate in the organisational top level decision making body (Preston, Chen & Leidner, 2008). Therefore, through this structural power of the office of the CIO or ITG, the CIO who is the head of that office has to report to the CEO of the organisation (Banker et al., 2011).

Basically, a clear defined function of the office of CIO at an organisational level is a good practice to start with while implementing ITG in any organisation and to sustain its strategy and objectives (Almeida et al., 2013; Bianchi et al., 2017; Wiedenhoft et al., 2017). Furthermore, when the CIO has structural power as head of the office he or she is likely to gain strategic business knowledge from the business heads as well as the business heads are likely to gain IT knowledge from the CIO (Bradley et al., 2012)

Moreover, the CIO through direct reporting to the CEO of the organisation has an influential role in the management team whereby IT strategic plans and visions can be communicated easily to the management team (Banker et al., 2011). According to Smith et al. (2013), in an organisation where the CIO has structural power and reports directly to the CEO, the organisation is likely to have effective IT governance as well as its IT services are expected to be on an advanced level. The effectiveness of this practice is related to structural power that the CIO has as a member of top management team and to the ability to communicate directly with the CEO which contributes to organisational performance (Zafar et al., 2016).

Previous research revealed that the implementation of this practice was perceived to be effective in organisations implementing IT governance (DeHaes & VanGrembergen, 2009). Also, Preston et al. (2008) revealed that the effectiveness of ITG is influenced by positive collaboration in decision making between the CIO and the top management team. When an organisation is looking for return from its IT investment it was revealed that formalised establishment of a CIO is among the initial things to be considered (Pang, 2014). However, in their research Bianchi et al.(2017) revealed that the Office of the CIO was not pointed out as an essential component to be included in the baseline of IT Governance adoption, even though Bianchi et al. (2017) noted that this practice is seen as crucial and with good effectiveness and ease of implementation. However, Smith et al. (2013) had a different opinion that the structural power of the office of CIO is not crucial and influential to the effectiveness of ITG when there is an IT steering committee.
b) IT leadership

IT leadership is a relational practice which refers to availability of staff within the organisation with the role to lead IT, who understands well the strategic linking between IT and business, and is influential in the use of IT within the organisation (Li & Tan, 2013). This position within the organisation is known as chief information officer abbreviated as CIO (Banker et al., 2011). The CIO or a similar position within organisations should have the ability to clearly state the IT strategy that must be well aligned with the organisation’s objectives (Almeida et al., 2013). Furthermore, the strategy should be clearly understood by various managers throughout the organisation (Almeida et al., 2013). Therefore, we can say that the goal of IT leadership is to achieve a coordination between IT and business across the enterprise (Almeida et al., 2013).

Availability of IT leadership in an organisation indicates that the role of IT in the organisation is realized, but its influence is based on the distance between the CIO and CEO (Ferguson et al., 2013). Further, when CIO reports directly to CEO it is considered as short distance (Ferguson et al., 2013). The shorter distance between the CIO and the CEO, the more influential the effectiveness of IT because the CIO becomes a member of top management whereby he or she participates in strategic decision making (Bradley et al., 2012). Therefore, when the CIO is part of the top management team in the organisation, the IT leadership will be more influential to the effectiveness of IT governance as well as to the organisational performance (Zafar et al., 2016).

Previous research revealed that availability of IT leadership in an organisation is a necessary component in the effectiveness of IT governance (Smith et al., 2013). The importance of the CIO comes from the knowledge of the IT-business strategic relationship which contributes to organisational performance (Smith et al., 2013). Further, Luftman, Lyytinen and Zvi (2015) revealed that the presence of two way communication activities between IT and business has a positive influence on the effectiveness of IT governance in the organisation.
3. Research Methodology

The purpose of this chapter is to present the methods and strategies that were used to carry out the research. In this section, research approach, research strategy and data collection methods are discussed.

In this section, processes, strategies and techniques involved in the research are illustrated on Figure 3.1. As it is shown in the diagram, the process starts by choosing the case study and concludes with the data analysis.

Figure 3.1: Research methods overview

3.1. Research approach

Generally, in a research study there are two approaches which can be used; the deductive and the inductive approach (Saunders, Lewis & Thornhill, 2009). To fulfill the purpose of this study and to fill the identified theoretical knowledge gap, a need to use previous
research and theories was given to create a base of this study. Thus, the deductive approach was considered as the research approach for this study. Deductive approaches are applied when there is a rich in previous knowledge and the purpose of the study is focused on theory testing (Elo & Kyngäs, 2008). The deductive approach was considered in this study because the need to consider the knowledge about the specific pre-determined ITG practices which are widely commonly in previous research. Basically, there exist several ITG practices and their adoption is dynamic from one organisation to another, without pre-determination of specific ITG practices it could lead the study to be unfocused. The use of existing theories facilitated the understanding and the testing of the ITG practices and their influence on the effectiveness of ITG. Therefore, ITG practices from previous studies were used to create the research model for this study, and the model was subject to empirical testing in Tanzanian public government organisations.

The research method choice usually depends on the purpose of the research, and can be either qualitative or quantitative. To align with the purpose of this study, a qualitative research method was used to explore the adopted ITG practices and their influence on the effectiveness of ITG. Qualitative research through interview data collection technique facilitates deep understanding of the insights of the interviewees. In an interview there is direct contact with a person with knowledge of the phenomenon being studied, which enhances understanding of the real-world context. Therefore, the use of qualitative method in this study may enhance a deep understanding of real world of currently adopted ITG practices and their influence on the effectiveness of ITG in Tanzanian public government organisations.

3.2. Research Strategy

According to Yin (2003, p.13) a case study is defined as “an empirical data enquiry that investigates a contemporary phenomenon within a real life context a specially when the boundaries between the phenomenon and context are clearly evident”. Based on that, to have deep understanding of the current situation on ITG practice and their influence on the effectiveness of ITG in public government organisations, a case study was opted as a research strategy. Previous research has been done in addressing different perspectives of ITG in public organisations, however little research has been done on exploring empirically the ITG practices influencing effective ITG in public government organisations. In such a situation where there exists little knowledge, the case study is appropriate because a deep understanding on the current situation will be gained and
contribute to the ITG knowledge body. According to Dube and Pare (2003), ITG in general is widely practiced in organisations. Therefore, to gain deep understanding and to fill the knowledge gap identified, the option to use case study which include empirical organisations was perceived to be appropriate. Since the focus is on public government organisations, then the case organisations involved in this study are Tanzanian public government organisations.

3.3. Data collection methods

The thesis data collection process began by sending the interview guide (appendix 1), an invitation letter (appendix 3) and the consent form (appendix 4) to Tanzanian public government organisations, which are the empirical cases. The consent form was used to uphold research ethics by seeking consent from potential participants and acknowledging their rights as research participants in a written document.

In this study, the interview guide was developed and served as a data collection tool. The developed interview guide had two parts, these are IT governance practices and the themes. The IT governance practices and the themes were derived from the systematic literature review. The research questions were developed from previous research studies. Therefore, themes in the interview guide (appendix 1) were focused on answering the research questions.

After the development of the interview guide, the constructs used were tested for validity. The constructs were validated by two master students from Jonkoping University and one Tanzanian government senior ICT officer. During this stage, we used the convenience sampling technique to get the validators, who would participate in validating the interview guide. The aim of this validation was to make sure that the tool was well understood, and that it measured the IT governance practices being studied and did not contain any ambiguity which would lead the study to be unsuccessful. The interview guide was sent in advance to the case organisations so that they could review and prepare responses during the interview session. According to Saunders et al. (2009), sending question in advance helps the interview session to be focused and it enhances the credibility of the study because the interviewee become aware of the topic and can prepare supporting documents.

Qualitative data was collected by conducting interview as a data collection method with the support of the interview guide. Three telephone interviews were conducted, table 3.1
shows interview details. All interviews were done using Skype. Following the acceptance to record the interview, the interview session was recorded using the Amolto call recorder for Skype (https://amolto.com/skype-recorder/). According to Saunders et al. (2009), recording interview helps the interviewer to concentrate on listening to the ongoing interview as well as enhances the accuracy of the responses.

After the interview, the responses were transcribed and sent back to respective empirical organisation for their reviewing and proof-reading. It means that the final interview transcript used in this study was the one that was reviewed and approved by respective empirical organisation.

Table 3.1: Interview details

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Interviewee position</th>
<th>Date</th>
<th>Duration (Min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanga UWASA</td>
<td>HICT</td>
<td>April 19\textsuperscript{th}, 2018</td>
<td>51</td>
</tr>
<tr>
<td>TPSRS</td>
<td>Assistant Secretary - ICT</td>
<td>April 20\textsuperscript{th}, 2018</td>
<td>71</td>
</tr>
<tr>
<td>Kinondoni MC</td>
<td>HICT</td>
<td>April 24\textsuperscript{th}, 2018</td>
<td>60</td>
</tr>
</tbody>
</table>

3.4. Data Analysis

The audio recorded interview was transcribed, that is we changed the format from audio to written text data. We transcribed all three performed interviews, which procedure helped to produce a qualitative data in the form of text which we can analyse easily. According to Saunders et al. (2009), data can be transcribed either manually or using a software package. We transcribed the audio recorded interviews manually, we chose this option because we did not have a budget for premium software as well as we avoided the challenges which may occur in a software voice recognition. The produced transcripts were returned to the respective interviewee for their proof-reading of their statements. This procedure which involves interviewees to check the final reproduced transcript facilitated in attaining data factual accuracy (Saunders et al., 2009). Each interview session had a different transcript file, which means that we produced three different transcripts.

According to Hsieh and Shannon (2005), there are three approaches which can be used in qualitative data analysis for interpreting the meaning of text, these approaches are directed, conventional and summative content analysis. In this study, the approach used
was a directed content analysis approach because this study originated from previous research and frameworks. In this approach, the existing theory are used as the basis of data analysis whereby the concepts are derived from it and it aims to validate or extend the existing theories (Hsieh & Shannon, 2005). Likewise, the concepts which are IT governance practices shown in table 2.1 as well as the research model were generated from the existing theories. Thus, the noted concept will be validated empirically in a Tanzanian government organisational context.

The transcribed interviews were analysed individually, which facilitated understanding of the adoption of ITG practices and their influence on the ITG effectiveness per organisation. In this phase, the ITG practices were used as categories since they were pre-defined during the literature review, which is in line with the method of directed content analysis (Hsieh & Shannon, 2005). Also, the analysis codes were pre-determined from the previous studies included in the literature review of this study as well as from the collected information. That is, on the interview constructs, the analysis codes were used to understand ITG practices adoption and their influence on effective ITG per respective organisation.

After individual organisational data analysis, an analysis across empirical organisations followed as a second analysis phase. The aim of this second phase was to detect the adoption status of ITG practices and their influence on the ITG effectiveness in Tanzanian public government organisations. The analysis was done by establishing the frequency of responses whereby the respective responses in a code column was counted. At this stage, results were tabulated with their respective frequency which helped to detect the status of ITG practices adoption and their respective influence on effectiveness of ITG. Therefore, the second phase data analysis was opted to answer the research questions.

### 3.5. Literature Review

To conduct this study two different data types were considered: primary data and secondary data. Regarding primary data, we refer to the data collected from three Tanzanian public government organisations. Whereas, secondary data was collected by the literature review to support the discovery of existing problems and form the base of our study.

Webster and Watson (2002) discussed the importance of previous reviews on the existing literature to start a new study, in other words, it is always essential to analyse the past for
better preparation for the future. Furthermore, “An effective review creates a firm foundation for advancing knowledge. It facilitates theory development, doses areas where a plethora of research exists, and uncovers areas where research is needed” (Webster & Watson, 2002, p. 13).

Therefore, conducting a literature review was needed for the study to start the research with the required knowledge. Several keywords were used, and the main terms were highlighted: “IT Governance”, “IT Governance mechanisms”, “IT Governance Practices”, “IT Governance Awareness”, “IT Governance in Developing Countries”. Basically, there was no time limitation while searching for different articles, though most of the relevant articles on the topic were dated between 2012 and 2018. However, to get the trusted information related to the field of research, a limitation was set to the peer-reviewed articles with only English versions to reduce unnecessary results that could also lead to time consuming choices of relevant articles.

Furthermore, existing search tools were used to get the required information to start with conducting the literature review for the study. The most used was Primo under Jönköping University Library together with Google Scholar as the most popular Internet search engine. Apart from the two main sources of literature in this study, we also used other internet sources that could provide us with relevant information on IT Governance, such as IT Governance Institute (ITGI)-ISACA. Therefore, all tools and technics used for the literature helped us to conduct the study with confidence for the trustworthiness of the secondary data.

3.6. Reliability and Validity

Reliability of the study refers to data collection methods that enhances consistence of the results (Saunders et al., 2009). According to Yin (2003), in a multiple case study reliability of the study is attained during the data collection phase by developing a case study protocol, which will be used for all cases. Thus, in this study the reliability was adhered by developing a case study protocol as shown in appendix 2. The protocol was used in all three case organisations. The approach to use a case study protocol facilitated to have similar procedures followed during the data collection in all three case organisations.

Construct validity in a study has a purpose of setting up the best operational measures for the studied concepts (Yin, 2003). That is, the questions being used in a study shall make
sense in measuring the particular concept being studied (Saunders et al., 2009). According to Yin (2003), construct validity is attained during a data collection and composition process by using tactics such as using several sources of evidence and review of case report by respective respondents. Therefore, the construct validity was taken into consideration during the data collection process by sending the interview transcript to the respective case organisation. The case organisations provided their comments which facilitated validity of the constructs used in this study.

3.7. External Validity

External validity is concerned whereby the findings of a study can be generalizable (Saunders et al., 2009). In a multiple case study, the external validity can be attained by replicating the study (Yin, 2003). Likewise, this study had taken external validity into consideration so that its results can be generalizable. The consideration is taken by involving three case organisations, replicating was done by using same protocol to all three case organisations. Similarly, when multiple cases is opted for chances of its results to be generalized is higher whereby the cases must be chosen in such a way that their findings can be meaningful (Dube & Pare, 2003; Niaki & Nonino, 2017). Therefore, to ensure that the findings of this study are generalizable, the cases involved were public government organisations, as the study had a primary focus on public government organisations. Also, the involved cases in this study, have different responsibilities in their establishment, this combination allowed to achieve a general view of government public organisations, and eventually its findings might be generalized.
4. Findings

The purpose of this chapter is to provide a findings overview. In this section the detailed findings from three Tanzanian public government organisations are presented and discussed. The focus is mainly based on ITG practices and their influence on effective IT Governance.

4.1. Tanga Urban Water Supply and Sanitation Authority

In this section, the main discussion is related to the findings gathered during data collection process at Tanga Urban Water Supply and Sanitation Authority (Tanga UWSA). The data collection was performed by the organisation’s employee who oversees Information Technology and System Administration, and has seven years of working experience. Data was collected through a Skype call interview which was held on April 19th, 2018 from 10.25 am to 11.16 am CET. The main function of the organisation is to supply clean water and removal of waste within Tanga City. Additionally, apart from serving Tanga City, this institution also provides technical guidance and support to other small water and sanitation entities in other districts of Tanga region. This organisation has a total number of 170 employees, among them there are six IT staffs.

Tanga UWSA operates under the ministry of Water and it is headed by the managing director who is responsible for all activities within the organisation. The managing director is supported by four heads of departments: technical, finance, human resource and customer service department. Some departments are composed by sections. For example, a section of IT systems administration is under the technical department, while another section of software development is under the human resource department.

4.1.1 Function of Department of IT.

In Tanga UWSA, IT activities are coordinated through two different departments depending on IT projects and their respective sections. As discussed above, for IT systems administration projects, IT activities are performed and coordinated under the technical department, while software projects development activities are coordinated under the human resource department. However, the function of IT remains the same in both departments, and it is mainly about administering systems, IT security issues, supporting organisational staff and other IT related activities to support business processes.
4.1.2 IT Governance Practices and their Influence

a) IT steering Committee

According to the interview, the practice of the IT Steering Committee is not formed yet. However, within the two departments they have another way to deal with IT projects developments and their implementation. Because, there is no steering committee, some prepared questions were discarded, and the discussion continued to figure out their approach without the mentioned practice.

When asked “If no IT Steering Committee, what is the approach used while implementing IT Project?” The interviewee responded in these words: “IT Section prepares a proposal depending on the nature. In case the project is Software related, then it’s with HR. In case it is System administration related, then it’s within Technical Department. The proposal is then reviewed by Head of Department, presented to the top management composed by head of departments and managing Directors and sometimes other members of management teams means heads of sections. The head of section may initiate the project or idea sometimes after receiving ideas from other staffs”.

Who is responsible for securing funds? “Mostly, the one who is preparing the proposal oversee the requirements of the planned projects to see if it can be attainable with internal or external funds. However, most of implemented project have been using internal funds that is proposed in the budget and budget passes through several stages before it is approved, therefore, for the proposal the project can be implemented if the budget requirements can be available”.

When asked about the Influence of managers involvement in IT activities, the interviewee replied: “Involvement help them to understand the idea, therefore, possible for them to provide maximum support on the implementation. If you leave them without understanding the idea, its background and they do not know intention of the project, what it will solve. Implementation will be hard as they have to allow you first before you proceed. Otherwise you will get some problems, the opposition will be high than the support during implementation.

b) IT strategy committee

Like the IT Steering Committee, also the practice of IT Strategy Committee is not available within Tanga UWSA organisation, which means that some prepared related
questions were discarded, and the discussion was elaborated instead. Therefore, when the interviewee was asked about the responsible person for providing updates of information to the top management, the response was: “The users responsible for a certain component of project are invited for discussion before the final implementation”.

One of the responsibility of IT Strategy committee is to ensure that the project is aligned with the business process activities. Within Tanga UWSA, this is practiced through: “different presentations done during IT projects development, and those who will be affected with the IT systems in different department are invited to attend presentations”.

c) Senior Managers Involvement in Information Technology

This IT Governance practice is also practiced and to know how and which approach is used three questions were asked and answered accordingly. The first question was, to what extent does senior and principal officers get involved in strategic matters related with IT? The answer from the interviewee was: “For example, Budgeting process which according to what is planned within a section starts with head of department, top management, then board of directors. Senior officers as the main users of system like Billing system, they are not only seat and wait for IT Reports, but also provide more useful feedback on the system”.

The second question was to what extent senior and principal officers are knowledgeable about IT projects in your organisation? The related answer was: “The knowledge is moderate, we let them know what is happening through seminars, meetings and there’s no special platform”. In the third question, we wanted to know how involvement of seniors and principals influence IT activities in the organisation. As an answer to the question with a personal experience the ITO said: “Their influence is notable. When someone is aware of what is happening, the possibility of getting more is higher. If their involvement with using IT has influence, to make sure every IT activity is automated with business process. From the experience, the change of involvement is going higher even their influence on IT activities performance. Almost 50% of IT activities are automated. By 2020, 80% of business processes will be automated”.

d) ITG frameworks

Regarding ITG framework practice, the main intention was to know the framework that is currently being used within the Tanga UWSA organisation. Therefore, since the
response for the first question was “NO”, the rest of the planned questions were considered as rejected and the discussion continued to assess the existing approach in relation to the ITG frameworks. The answer for the first question to know existing frameworks being used was: “Not sure which framework is being used. We can say that we use a Guideline provided by Tanzania e-Government Agency. But regarding COBIT, ITIL, etc. not yet”.

To know whether there exists any tool for internal control of IT Systems, the interviewee replied that: “Guidelines provided by Tanzania eGovernment Agency, instructs at least all organisation how to bide with those IT guidelines related to ICT facilities acquisition, ICT policy, etc. Therefore, when implementing IT Projects, we must seek Guidelines provided by Tanzania eGovernment Agency. The Tanzania eGovernment Agency is responsible of regulatory for IT matters within the Government of Tanzania institutions. Till now No COBIT, ITIL, etc.”.

Regarding the technique being used to measure IT Performance, here is the approach as discussed by ITO: “Apart from internal audit, we Invite external parties to conduct extensive audit on the IT system to ensure the performance, security issues and other related matters are verified to make sure they meet the internal goals and objective”. Additionally, we wanted to know if there is a specific way or guide this organisation uses for the return on investment to track the progress, however, the response to this was “NO”. Afterwards, we asked how the organisation can assess especially in case investment is high. This was the answer: “The salary is only expense till now for the most of projects implemented”.

Furthermore, the need to know about the influence of the guidelines provided by Tanzania eGovernment Agency was important in our study, and we got the response here: “There is standardisation throughout the country to make sure all organisations are meeting the standards. Instead of one organisation using one standard and another using a different one”. In addition, how the management team perceive the guideline being used was answered in this way: “They accept because the guideline before being provided was passed through different channels and approved and authorised as it can deliver assurance of what IT should do and not”.
e) Office of the CIO

This ITG practice is being practiced and our intention here was to know how and who are involved. When the interviewee was asked whether there exists an office of CIO or ITG (IT Department), this was the answer: “IT related matters are not at the department level, they are at section levels instead”. Afterwards, we wanted to know if the function of the CIO or the ITG office is clearly defined at the organisational level, this was answered with “YES”, even though the details regarding responsibilities were not available. In addition, to know the influence of the Office to IT in the organisation, this was the answer: “No specific department responsible for IT matters. The role is to make IT related matters notable”.

f) IT leadership

This practice is basically concerned with the organisational structure, whereby in an organisation, it is generally done by a staff appointed as a CIO to lead and deliver IT services. By asking whether there is any staff appointed as CIO or head of IT, this was the answer: “Each section has Head, but generally, there is no specific Head of all IT Matters”. And the interviewee added that the people in charge of IT or head of sections are IT professionals in their background.

Furthermore, another important question was to know how the CIO or the other person in charge of IT issues interact with the Managing director at Tanga UWSA. Therefore, this is the answer from ITO: “Head of Department is called Manager. Head of sections are called IT Officers (ITO). Head of Technical report to the Technical Manager. IT Officer Software Development reports to the HR who is a Head of HR Department. No direct connection between IT Officer and CEO (Managing Director)”.

In addition, we wanted to know how the ITO interact with the managing director and other managers and the answer was provided here: “No direct with Managing director, however, everything related to IT passes to the Head of Department and Head represents it to the higher level unless if Officers are invited to have presentation with all of them in one place. The connection between ITO with Managing Director is based on the Invitation, but Head of Department has a direct interaction”.

The last question related to the influence of the presence of ITO to IT activities and was answered by the interviewee like this: “It is an opportunity to advise and plan IT related
matters. IT staffs use more effort to present different projects, because they interact with people with poor knowledge in IT issues. The current structure is not based on the Guideline being used provided by Tanzania eGovernment Agency. By 2018 – 2019, probably the new guideline related to the organisational structure will be available”.

4.2. Tanzania Public Service Recruitment Secretariat

In this section, the main discussion is related to the findings gathered during the data collection process at the Tanzania Public Service Recruitment Secretariat with an organisational employee who is the head of the Information Technology department. Data was collected through a Skype call interview which was held on April 20th, 2018 from 10.00 am to 11.11am CET.

The Public Service Recruitment Secretariat (PSRS) is a Tanzanian government organisation with a role to run recruitment of staff in the Tanzanian public service. In their role, they run a candidate’s database which facilitates the recruitment process. While job seekers who are candidates register themselves in the database, the database is available online, which means that it can be accessed over the Internet. Moreover, to communicate with the public on available position in the Tanzanian Government they advertise vacant positions electronically.

According to the structure of this organisation, the overall head of the organisation has a title of Secretary and the heads of departments have titles as deputy secretaries. The interviewee of this case organisation is the head of the Information Technology department with the title of Deputy secretary – ICT. This organisation has a total of 75 employees, among them there are five employees who are IT staff working with IT related jobs.

4.2.1 Function of Department of IT

The department of IT in this organisation is known as the Information and Communication Technology unit. Its role is to create, maintain and update the job seekers’ database. This role is fulfilled with responsibilities such as management of IT systems, operation facilitation of e-Government and e-business services. Further, this department does research and propose areas where IT can be used for enhancement of service delivery.
4.2.2 IT Governance Practices and their Influence

a) IT steering Committee

This practice is adopted and practiced since 2017, and it consists of 12 members who are the head of the departments as well as members of the management team. In terms of leadership, the Secretary of this organisation is the chairman of this committee while the deputy secretary-ICT is the secretary of this committee.

Regarding its responsibilities, the committee gives directives of what as to be done and prioritise IT projects. For the agreed projects and to those which are being implemented, the committee is responsible in reviewing its implementation. Also, the committee is responsible in foreseeing the adoption of IT into their business process. They meet when there are urgent issues to be discussed and they have scheduled meetings quarterly i.e every three months. However, the quarterly schedule is not adhered.

From the time of its establishment, the committee is perceived to be more influential both regarding awareness and budget. Awareness of IT issues among members of the management has increased as it was noted that “ever since we established the IT steering committee awareness has increased and we do not get strong resistance when IT changes are imposed.” The presence of the IT steering committee has created a platform for sharing ideas between members of the IT projects. Similarly, the awareness from the head of the department has contributed to the IT budget to be higher compared to previously.

b) IT strategy committee

During the interview, we found that this practice is practiced in a project management style. It means that when there is an IT project to be executed they adopt a project organisational structure for managing that project. The project organisational structure is temporary for a specific project. Within this project organisation structure, the chairman is the head of the department owning business process to be implemented. As the project manager is an employee from the department of IT, it was noted that: “a staff from the department of IT, who is an IT professional is appointed as project manager.” The members of the project are various staff within the organisation who are appointed based on the nature of the projects and their experience. The project chairperson is responsible to give progress feedback to the steering committee. Furthermore, the project organisational structure facilitates fast tracking project implementation, because it consists of staff who have been appointed from various departments. Also, during the
interview it was revealed that this project organisational structure has helped them to closely follow up projects.

c) Senior Managers Involvement in Information Technology

The senior officers are involved in strategic matters related to IT during the IT strategic plan preparation. The workshop and seminars offered by the organisation itself are used as the channel of involving senior managers. Also, when the steering committee had decided on an IT project, the senior managers are involved during the system development phases whereby they participate through providing system requirement as the interviewee said: “they are officially involved, and all the requirement we use comes from them.” However, before the project are launched this organisation tends to involve its senior officers workshop with the purpose to equip them on the project being implemented.

The involvement of senior officers had helped head of department in sharing their experiences on the projects which are to be implemented or those one which are in place, to insist on this, interviewee said that senior managers usually provide feedback to the IT department. Interviewee added that “Once we meet with their bosses in management meeting they give us a green light.” It means that the head of department have no worries about the mentioned project. Also, it was revealed that the feedback which they get helps in deciding a move to another step either back or forward, however sometimes they encounter difficulties in implementing their feedback due to budget constraints.

d) ITG frameworks

At the time of interview of this study, it was noted that there was no adopted IT governance framework which was in use. However, for internal control related issues they use their ICT policy which act as a guide for internal control. During the interview discussion, the interviewee said: “this document has procedures which we follow, and if we don’t have something in our ICT policy then we update it”.

Despite of using the ICT policy as the internal control guide its influence remains neutral because some parts of the organisation follow the guides while other parts do not use it at all or they adopt few guides. Regarding the efficient of ICT policy to be used as the internal control guide the interviewee said that it was “not yet implemented well in our
organisation”. By that, he meant that the ICT policy guides are not yet being adopted in all the organisation.

e) Office of the CIO

This practice is adopted and practiced whereby its name is Information and Communication Technology Unit and it is shown in the organisational structure. The functions of this practice are defined at the organisational level as shown in section 4.2.1 of this study. Being adopted, the person who leads this office has the title of Deputy secretary – ICT because he is the head of department and he reports directly to the Secretary who is the head of the organisation.

During the interview, it was revealed that this practice is very influential in this organisation because it championed the IT ideas and implementation of IT projects and delivery of the IT services. The Interviewee mentioned that: “everything which we do here has been championed from the IT department”.

f) IT leadership

This practice is adopted and practiced in this organisation and there is a person who has been appointed to lead IT activities as well as to lead IT department. The head of IT services, who is also head of department, is a professional IT expert with 12 years of experience. The IT leader has the title of Deputy Secretary -ICT and reports direct to the Secretary who is the head of this organisation.

The Deputy secretary-ICT (IT leader), interacts with the Secretary in the management meeting, the information technology steering committee and directly by means of one-to-one contact. The interviewee said: “when there’s something burning I go directly to Secretary and discuss issues.” While the interaction with other top-level management is made on the management meeting, Information technology steering committee and a direct one to one contact.

The influence of this practice is mostly at the management level because the interviewee most of time was insisting on keeping a relationship with other members of management to have a positive influence in the organisation. The interviewee mentioned that: “to have someone who has voice to the management is very crucial for things to be done” whereby a “I respond and make follow-up of various issues to the management.” Further, he said: "I personally talk directly with the Secretary and push things.” During the interview it
was noted that this influence had helped IT activities to be implemented with no information breakdown, for instance he mentioned that: “influenced our IT activities to carried easily and successfully”. This shows that being close to other decision makers simplifies information dissemination and creation of common understanding.

Further, the interviewee shared his personal experience that the success of IT in an organisation also depends on the perception of the head of that organisation. In his perception he noted that if the head of organisation he/she is interested in IT, it makes easy for various ideas to be considered and supported. The interviewee said that: “for our case, we are progressing in IT activities because the Secretary loves IT a lot” From his personal example in their organisation it reveals that sometimes personal perception has influence on the effectiveness of IT in organisations, especially in developing countries where there exist many services which are done manually.

4.3. Kinondoni Municipal Council

In this section, the main discussion is related to the findings gathered during the data collection process at Kinondoni Municipal council. Data was collected through a Skype call interview, the interview was held on April 24th, 2018 from 13.00 to 14.00 CET. The interviewee was the Head of Information and Communication Technology Unit at Kinondoni Municipal Council. The head of IT has 8 years of experience in IT Industry

Kinondoni municipal council is a Municipality within the Dar es Salaam region in Tanzania. It is a public government organisation in Tanzania whereby it was established as per the Government notice in the year of 2000. This notice was issued by the president’s office, Regional Administration and Local Government. The main role of the organisation is public service delivery to the people of Kinondoni Municipality. This organisation has a total of 5,000 employees among them there are five employees who are IT staff working with IT related task.

4.3.1 Function of Department of IT

Apart from supporting the organisation in performing daily activities, the main function for the IT department is to identify IT projects to be implemented within the organisation. Therefore, after approval by the council it is the role of IT to collaborate with responsible department that is concerned and ensure that the project is developed and implemented.
4.3.2 IT Governance Practices and their Influence

a) IT steering Committee

According to the interview, no IT steering committee exists in the organisation. This organisation has different ways to deal with IT projects management which includes how projects are initiated and monitored during development until the full implementation of the project is performed. Since the answer for the first question was “NO,” the remaining three questions related to the practice of the IT steering committee were discarded. However, the discussion was kept on with new questions to find out how new IT projects are approved and evaluated for the strategic alignment between business and IT. In addition, there was a need to know how funds for different projects are managed and who is responsible for it.

In case of the IT project being implemented without a IT steering committee, this approach was shared by interviewee: “There is a government institution which is dealing with projects like these. The project must be Identified by IT department. Then the project is sent to the board of council which is Council Management Team (CMT). CMT must review the project, its benefits, and the budget allocated to the project. Then after reviewing by CMT, the project proposal must be sent to the government entity (e-Government Agency - eGA). The e-GA review all processes of the project, after reviewing and agree the project must be sent back to the council and the council will return it to the council meeting and Finance Team. After a review and approval by Financial Management Team, according to the project proposal and the budget, then project is ready to be started”.

The Council Management Team (CMT) is composed of 19 members who are heads of departments and the head of CMT is Municipal Director. Also, there is a Financial Management Team which includes 17 members who are council staff and councilors (Councilors are not more than ten according to interviewee). Furthermore, projects are initiated by IT department and user department. As said by the interviewee: “Users seek for the solution and address their needs to IT (like, we need this and this), and IT department will initiate the project”.

In addition, insights regarding return on investment were necessary, therefore, it was needed to know who is responsible for projects funds among user department, IT department, financial management team and CMT. Then, the answer was: “This depends
on IT department and the user department. For example, we look at the project and talk with planning department and economic department to let them know that we are going to implement the project next year. Then we should agree on whether IT or User department will handle the budget for the project”. According to the discussion, user department means the department that own the system. For example, Finance department will be more concerned with “electronic revenue system” than other departments.

b) IT strategy committee

Due to that there is no IT steering committee, no IT strategy committee exist within the organisation. However, they still have a way to deal with projects development and monitoring of the progress. Therefore, we wanted to know whether there is a team responsible to monitor the ongoing or project progress in case the project is approved to be implemented. The answer from the interviewee was: “No, there is no practice like that, but IT department and user department are generally responsible for follow up. However, there is also a specific person in IT to make a follow up looking for challenges and implementation progress. E.g: for electronic revenue project, one person from IT and a revenue account from finance department were responsible for follow up”. For this practice, four questions were also discarded since the answer for the first one was “NO”. However, the practice is adopted in a different way in the organisation.

c) Senior Managers Involvement in Information Technology

This practice is adopted within the organisation considering that the senior and principal officers are getting involved in different projects from the project initiation stage to the project implementation. In addition, when senior officers get involved with IT project it is usually done through various presentations, as said by the interviewee: “Different presentations are conducted during the budget implementation. Everything related to what have done previous year or what projects are planned for the next year is shared. One of the members in the department is appointed to join the team of council or budgeting implementation in the council”. Moreover, senior officers are trained before and after project implementation to be aware of the expected outcome and gain knowledge related to the concerned IT project.

Involvement of senior officers seems to be valuable for the successfullness of IT projects. Regarding the influence of senior officers on IT activities in Kinondoni Municipal, the interviewee replied that: “Some of the seniors may be against the project and some are
very positive. But, we usually deal with heads of departments and when they already agreed with the project none is against. Because, the interested ones were involved, and they contributed by providing inputs during the project development. From experience, many of seniors are very supportive”. In addition, for those few who are not supportive, it is mostly because they still like manual systems and they resist change. However, with time, heads of departments will manage to convince them, and they will change their behaviour.

d) ITG frameworks

The practice of ITG framework is not adopted in Kinondoni Municipal. According to the interview they have a different way of working instead of ITG frameworks. When the Head of ICT was asked about a used framework, this was the answer: “We are not specifically using COBIT, ITIL, etc. But, we are using a guideline from e-Government agency, it is a guideline to set up all government activities in the institution. e-Government agency provides guidelines and they already provided the new version of guidelines for 2018”. In addition, the guideline is mostly an extract of COBIT and ITIL. This guideline from eGovernment is used even during project proposal. The proposal should be sent to eGovernment for approval, so that they can see if the organisation proposes to follow the guideline.

Furthermore, when we wanted to know if they have any guide to measure the return on investment, the answer was this: “No specific guideline, but, the guideline from eGovernment guides us to follow those steps and one of the steps is about majoring the cost of project. And if the cost is very high we discard the project”. In addition, according to the interviewee, the guideline seems to be easy and in case of difficulties, they must consult eGovernment agency. In addition, the guide was sent to the organisation three years back from when the study was conducted (meaning 2014) and there was a positive difference compared to before when there was no guideline.
e) Office of the CIO

For this practice initially, the interviewee was not sure whether it is adopted or not, however, after explanation of what we mean by office of the CIO, the interviewee responded: “YES, we have, I am the head of IT department.” When he was asked if the organisation has an office of CIO or ITG (department of IT) in its organisational structure, this was the response: “YES, I will send you the structure.” It was the same reply when the question regarding the function of CIO or ITG was asked.

Further, since the organisation has the department that basically deals with IT activities, the need for this department’s influence on IT issues was important in the study. Therefore, here is the answer when to the question “How does the presence of this office influence the IT in your organisation?”: “All activities of the council nowadays depend on technology like collection systems throughout the council, so council depends mostly of its activities on IT for daily activities. And now, none resists to IT project sent to CMT because they know the benefits”. Further, it was found that the presence of IT department in this organisation has influence financial issues because, IT has its own departmental budget to run their activities, the interviewee said: “The department of IT has the budget at the council”. It is clear, that even though names might be different, however, the office that manage IT related matters is available and active.

f) IT leadership

The “YES” answer for the first question strongly indicate adoption of IT leadership practice. In addition to that, another “YES” was received when we asked about professionalism of the leader in charge of IT related issues within the organisation. This is due to that the head of Information and Communication Technology has eight years of experience from the IT Industry.

Regarding the report to and interaction with the top management, CIO considered in this case the head of ICT who directly report to the Municipal Director (Municipal director is the CEO in this organisation). The Municipal Director is also the chairperson of Council Management Team (CMT). To know the influence of CIO in the organisation the question “How the presence of CIO does influences IT activities in your organisation?” was asked this answer was provided: “Being head of IT, Influence is based on cooperation with other departments issuing advices about what to be done concerning IT activities”. On top of
this response the interviewee added that: “influence is very positive, because we make discussion in a friendly way, we used to get direct comment on systems improvement”.

Finally, the discussion was closed by two additional questions that were answered respectively (1). “Apart from these discussed practice, any other practice which you have in your organisation?” This was answered according to the interviewee: “No other practice yet now, we cannot go out of guideline from eGovernment. Maybe for non-government institutions, but for government institution we have to follow the rules and the guideline provided”. (2) “What do you think can be the source of IT to be successful?” said the interviewee answered: “Funds are the key for IT projects. If we have funds we can do much better than we do now”.
5. Analysis

The purpose of this chapter is to analyse the findings presented in chapter 4. This analysis is the basis for answering the research questions. At first, the empirical organisations are analysed individually and the analysis across all three organisations follows.

The IT governance practices and their influence on the effectiveness of ITG was analysed according to individual empirical organisations and finally, across the empirical organisations, which facilitated the answer to the research question. We started analysing qualitative data collected from Tanga Urban water supply and Sanitation Authority. Next, we analysed qualitative data collected from Tanzania Public Service Recruitment secretariat. Finally, analysis was performed for qualitative data collected from Kinondoni Municipal Council.

5.1. Tanga Urban Water Supply and Sanitation Authority

In this section, we analysed the findings from Tanga Urban Water Supply and Sanitation Authority. The purpose of this analysis was to determine the adopted ITG practices and their influence on effectiveness of ITG. The analysis of the findings from Tanga Urban water supply and sanitation authority indicated that, this organisation has adopted two out of six ITG practices. The adopted practices are the senior managers involvement in IT and IT leadership practices. The office of the CIO, IT steering committee, ITG frameworks and IT strategy committee are not adopted.

Furthermore, after analysis, the senior managers involvement in IT practice was indicated to have influence on effectiveness of ITG in facilitating knowledge sharing through collaboration between IT and business units. Also, the IT leadership practice indicated to have influence on overseeing and coordinating IT directives in the organisation. In this analysis, knowledge sharing through collaboration between IT and business units appeared most of times indicating that in this organisation information might have more priority when implementing IT activities.
5.2. Tanzania Public Service Recruitment Secretariat

In this section, we analysed the findings from Tanzania Public Service Recruitment Secretariat. The purpose of this analysis was to determine the adopted ITG practices and their influence on the effectiveness of ITG. The analysis of the findings indicated that, this organisation adopted five out of six ITG practices. The adopted practices are IT steering committee, IT strategy committee, senior managers involvement in IT, IT leadership and office of CIO. The ITG framework practices is the only practice which is not adopted in this organisation, it means that there’s no guide that is used during implementation and monitoring of IT activities.

Furthermore, the adopted practices indicated to have influence on the effectiveness of ITG in creating awareness within the organisation about ongoing IT projects. In this organisation, when members of the organisation are aware of ongoing IT projects it was indicated to be influential regarding knowledge sharing through collaboration between IT and business units. This setting influences members of the organisation to monitor and evaluate their ongoing IT projects. Also, through the analysis it was indicated that steering committee was influential on decision making in the implementation of IT projects as well as securing funds for IT projects implementation. The office of the CIO and IT leadership practice was indicated to have influence in direct participation in management meeting as well as in decision body whereby responsible person directly presents the IT agendas. However, the analysis revealed involvement in decision making body at most times, which indicates that in this organisation the presence of IT leadership with capacity to attend management meeting is more influential because the person in charge can defend IT agendas directly.

5.3. Kinondoni Municipal Council

In this section, we analysed findings noted from Kinondoni Municipal Council. The purpose of this analysis was to determine the adopted ITG practices and their influence on the effectiveness of ITG. The analysis of the findings indicated that, this organisation has adopted three out of six ITG practices studied. The adopted practices are Senior managers involvement in IT, IT leadership and office of CIO. While, the IT steering committee, IT strategy committee and ITG Framework are the practices which are not adopted.
Furthermore, the analysis indicated that the influence of adopted ITG practices is based on direct participation in the organisation decision body. The IT agendas are presented directly by the person who is appointed to lead the office of CIO as well as he oversees IT matters. The influence of this person is on his capacity to be involved in the organisational decision body and to coordinate and issue IT directives. In addition, the analysis indicated that knowledge sharing through collaboration between IT and business units is influential to the effectiveness of ITG.

5.4. Analysis across empirical organisations

In this section, the analysis from individual cases of this study was used as the basis for this analysis, table 5.1 shows the summarised analysis of the adoption status of the ITG practices per respective organisation. The analysis across empirical organisations had a purpose to detect adopted ITG practices and their influence on effective ITG in Tanzanian public governmental organisations. Also, the analysis across empirical organisations was used to answer the research questions of this study. The analysis involved with identifying organisations that adopted the same ITG practices and with similar influence on effective ITG. Therefore, table 5.2 represents the most detected adopted ITG practices and their respective influence on the effectiveness of ITG in three Tanzanian public governmental organisations.

Table 5.1: Summarised ITG practices adoption status

<table>
<thead>
<tr>
<th>Organisations</th>
<th>ITG Practices</th>
<th>Structure</th>
<th>Process</th>
<th>Relational</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>IT Steering Committee</td>
<td>IT Strategy Committee</td>
<td>Senior MI</td>
</tr>
<tr>
<td>Tanga UWASA</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>TPSRS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Kinondoni MC</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

0= Not adopted; 1= Adopted; MI=Managers involvement in IT
Table 5.2: The adopted ITG and their influence

<table>
<thead>
<tr>
<th>Adopted ITG practices</th>
<th>Influence on the effective IT Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure</strong></td>
<td></td>
</tr>
<tr>
<td>Senior managers</td>
<td>Share knowledge through collaboration between IT and business units in the organisation.</td>
</tr>
<tr>
<td>involvement in</td>
<td>Enable successfulness of IT project within organisation.</td>
</tr>
<tr>
<td>Information Technology</td>
<td></td>
</tr>
<tr>
<td><strong>Relational</strong></td>
<td></td>
</tr>
<tr>
<td>Office of the CIO</td>
<td>Involvement in decision making in the organisation.</td>
</tr>
<tr>
<td></td>
<td>Oversee all matters related to IT in the organisation as well as issuing IT directives and enable involvement of senior managers.</td>
</tr>
<tr>
<td>IT leadership</td>
<td>Share knowledge through collaboration between IT and business units in the organisation.</td>
</tr>
<tr>
<td></td>
<td>Oversee all matters related to IT in the organisation as well as issuing IT directives.</td>
</tr>
</tbody>
</table>

The information presented in table 5.2 concludes on the identification of adopted ITG practice and their influence on effectiveness of ITG in Tanzanian public governmental organisations. Moreover, this information suggests that the presence of person who oversee all matters related to IT and who can issue IT directives is influential to the effectiveness of ITG in public government organisations. This influence is supported with the presence of capacity to participate in organisational decision making as well as presence of knowledge sharing between IT and business.
6. Conclusion

The purpose of this thesis was to explore the adopted ITG practices in Tanzanian public governmental organisations, and to explore the influence of the adopted ITG practices on the effectiveness of IT Governance. The study had two research questions, the research model of this study and the analysis across empirical organisations facilitated answering these two research questions which contributed to the IT Governance body of knowledge.

According to the analysis across empirical organisations, it was suggested that senior managers involvement in IT, office of CIO and the IT leadership are the IT Governance practices adopted in Tanzanian public governmental organisations. The senior managers involvement in IT was found to have influence on knowledge sharing through collaboration between IT and business units. Moreover, the office of the CIO was found to have influence on organisational decision making through direct representation in the decision body by a person who oversee and issues IT directives. Furthermore, the IT leadership was found to have influence on facilitating knowledge sharing between IT and business units as well as overseeing IT matters and issuing IT directives in the organisation. However, some of the validated practices were not adopted due to presence of their own way of dealing with IT and decision to adopt them was not yet reached.
7. Discussion

The unknown ITG practices which are adopted in public governmental organisations in developing countries motivated this study and Tanzania was chosen as a case country. The theoretical knowledge gap that existed in the IT governance body of knowledge was identified and this study aimed to fill that gap. Through identification of adopted ITG practices and their influence on the effective IT Governance in Tanzanian Public governmental organisations, this thesis filled the noted knowledge gap.

On one hand, the analysis of the findings detected the ITG practices which have been adopted and their influence on the effectiveness of ITG. The detected influence of the adopted practices on the effectiveness of ITG was found to support previous research by Ali and Green (2009); Banker et al. (2011); Li and Tan (2013) whereby they found influence to be on IT performance improvement, participation in decision making and knowledge sharing respectively. Our findings of partly adoption of ITG practices is in line with the previous research by DeHaes and VanGrembergen (2004), which state that the organisation may choose which practices to adopt. However, since the studied organisations are governmental, the adoption of more ITG practices might be influenced by governmental higher-level decisions. Also, the study found unexpected findings in the part of the validated ITG practices, whereby, the perception of the head of organisation plays a major role on the effectiveness of IT. This unexpected finding from the head of organisation might mean that, even if ITG practices are adopted, the effectiveness of ITG will mostly depend on the moral perception of the head of the organisation regarding the role of IT in service delivery.

On the other hand, the analysis of the findings detected practices which were not adopted. They were not adopted because decision to adopt them was not yet reached as well as presence of own way of dealing with IT. These findings are supported by the previous research by Rivera-Ruiz and Ferrer-Moreno (2015) that the organisation may opt ITG practices to adopt which are perceived to be influential to its environment. This might mean that case organisation decided not to adopt some of the ITG practices because they have their own way of dealing with IT which fits their environment. However, their own practices are not aligned with ITGI (2003) best practices. This study can share insights regarding the practices which are not adopted and add new understanding to the ITG knowledge body. Despite the noted initiative to extend service delivery through IT, the study found that the practices which were not adopted, their absence were not considered
as the barrier towards IT service delivery. This finding is not different to that of Ali and Green (2007); Ferguson et al.(2013) that adopting ITG practices such as IT steering committee and strategy committee has positive influence on the effectiveness ITG in project implementation. This situation might mean that, even in the absence of some ITG practices such as IT steering committee and IT strategy committee the effective IT might be attained, and it may have influence to the organisational performance. In addition, the previous research by Bianchi et al.(2017), suggested the importance of ITG framework in ensuring business value maximization. Despite of the noted importance of ITG frameworks, we found that the ITG framework was not adopted by all three case organisations. Instead, localised government IT guides from e-Government Agency are used for guidance of IT activities. This might mean that organisations might develop their own guides, to guide their IT services without considering ITG frameworks.

The methods used in this study facilitated the success of this study. The deductive strategy, that was applied, facilitated preparation of research model which guided data to be collected through a semi structured interview. The case study, which involved public organisations facilitated the understanding of current matters related to IT governance practices in public organisations, which brings opportunities of enhancing the knowledge in the domain of IT governance. In this context, adopted ITG practices and their influence on the effectiveness of ITG was perfectly studied. During the data collection, the use of interviews facilitated the data collection because at some point explanation of ITG practices was needed by interviewees. The explanations facilitated the creation of understanding the ITG practices being researched. For instance, some of the ITG practice their literature labelling was different from that used in empirical organisations. Further, the use of interview during data collection enriched the understanding of some factors which might have positive influence on the implementation of effective ITG specifically in developing countries.

Moreover, findings and the analysis carried out during the study provided important insights that contributed to communicate implications for both research and practice. The study revealed adopted ITG practices in Tanzanian public governmental organisations (Table 5.1) and their influence on effective IT Governance. In addition, findings helped to grasp understanding on how adopted ITG practices also known as ITG mechanisms are supportive for value creation through IT and business alignment, in other words, influence effective IT Governance (Table 5.2). Despite the plausible influence of the studied ITG practices on the effective ITG in public organisations, generalization might
not be applicable for the collected data since the study was delimited to only three organisations. However, the study brings an important knowledge in the area ITG for both researchers and practitioners in the study especially for those interested on ITG practices in developing countries.

Furthermore, valid, and reliable findings practically imply different ways Tanzanian public organisations could embrace ITG practices. From the adopted ITG practices, the study shared practical examples provided by interviewees about interaction management between various levels from low- to the top-level management. Therefore, the results testify the impact of adopted ITG practices to the success of IT projects initiation, development, and implementation as it was emphasized by IT professionals (interviewees) in respective organisation. Senior management involvement, Office of CIO and IT leadership were found as practices that influence effective ITG in these organisations by enabling knowledge sharing through collaboration between IT and top-level management. The results show that Office of CIO and IT leadership practices can facilitate involvement of senior managers in IT projects and enable IT leaders to participate in decision making.

The study intended to uncover the adopted ITG practices in Tanzanian Government public organisations and explore the respective influence on the effective IT Governance. Nevertheless, the study recommends future research. Firstly, according to the findings ITG frameworks was the only practice that is not adopted across all three organisations. In this regard, Interviewees from different organisations mentioned that there is a guide provided by the e-Government Agency. Therefore, guide from e-Government Authority is being used instead of ITG frameworks. However, ITG frameworks such as ITIL, COBIT or ISO/38500 were discussed and proved to be the best starting point while implementing IT Governance (Bianchi et al., 2017). In addition, IT Steering committee and IT Strategy committee practices were not adopted by two organisations. Also, the Office of CIO practice was not adopted by any of the organisations. In other words, these organisations have their own ways to deal with IT projects. However, ITGI (2003) provides Regulatory Reports and Emerging Standards on IT Governance that should be considered while implementing IT Governance. Therefore, future research may focus on challenges that organisations are facing to adopt IT Governance frameworks and other practices. Secondly, since the study was delimited to the three public organisations in Tanzania, the future study may focus on quantitative research and cover a larger number of Tanzanian governmental public organisations to enable generalizability. Furthermore,
the same study can be conducted in other developing countries in the region and evaluate the similarities on challenges and opportunities.
References


Appendix 1: Interview Guide

Jönköping University – Jönköping, Sweden
Jönköping International Business School

Master thesis: IT Governance Practice – A Multiple Case Study of Tanzanian Public Government Organisations

The purpose of this thesis is to explore the adoption of IT Governance practices in the context of Tanzania public government organisations. Therefore, this study aims to gain more knowledge on IT Governance practices adopted in developing countries especially in government public organisations.

Research questions:

1. What are the adopted IT Governance practices influencing effective IT Governance in Tanzanian Government public organisations?
2. How the adopted IT Governance practices influence effective IT Governance in Tanzanian Government public organisations?

<table>
<thead>
<tr>
<th>Practice</th>
<th>Talking Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>General information</td>
<td>1. Respondent’s title and position in his organisation</td>
</tr>
<tr>
<td></td>
<td>2. Respondent’s experience in IT industry</td>
</tr>
<tr>
<td></td>
<td>3. Organisation background information and its function.</td>
</tr>
<tr>
<td></td>
<td>4. Organisational structure</td>
</tr>
<tr>
<td>IT Steering committee</td>
<td>1. Do you have IT steering committee?</td>
</tr>
<tr>
<td></td>
<td>2. What is its composition in terms of its members</td>
</tr>
<tr>
<td></td>
<td>3. What are the responsibilities of steering committee</td>
</tr>
<tr>
<td></td>
<td>4. How does it influence IT activities in your organisation?</td>
</tr>
<tr>
<td>IT Strategy committee</td>
<td>1. Do you have IT strategy committee?</td>
</tr>
<tr>
<td></td>
<td>2. What is its composition in terms of its members</td>
</tr>
<tr>
<td></td>
<td>3. What are the responsibilities of strategy committee</td>
</tr>
<tr>
<td></td>
<td>4. How does it influence IT activities in your organisation?</td>
</tr>
<tr>
<td>Senior Managers involvement in IT</td>
<td>1. To what extent does senior managers get involved in strategic matters related with IT</td>
</tr>
<tr>
<td></td>
<td>2. To what extent senior managers are knowledgeable about IT projects in your organisation</td>
</tr>
<tr>
<td></td>
<td>3. How does their involvement influence IT activities in your organisation?</td>
</tr>
</tbody>
</table>
| ITG Frameworks | 1. Among the existing IT Governance frameworks, what framework(s) is currently being used in your organisation? And for what purpose do you use it.  
2. Do you find it easy to adopt IT Governance frameworks within your Organisation?  
3. How does the use of framework influence IT activities in your organisation? |
| Office of CIO or ITG | 1. Does your organisation have Office of CIO or ITG (IT Department)?  
2. Is the function of CIO or ITG office clearly defined at organisational level?  
3. How does the presence of this office influence the IT in your organisation? |
| IT leadership | 1. Is there any staff appointed as CIO (head of IT) in your organisation?  
2. Is the CIO of your organisation IT professional?  
3. Where does the CIO reports?  
4. How does CIO interact with CEO and top-level management?  
5. How does the presence of CIO influences IT activities in your organisation? |
| OTHER Comments | 1. Apart from these discussed practice, any other practice which you have in your organisation?  
2. How does it enable/influence IT activities in your organisation?  
6. Any comment which you would like to share with us? |
Appendix 2: Case Study Protocol

1. Preamble
   1.1. Confidentiality
   1.2. Publication
   1.3. Data capturing
   1.4. Research model

2. General
   2.1. Overview of the research project
   2.2. The case research method

3. Procedures
   3.1. Selection of cases
   3.2. Number of cases
   3.3. Establishing contact
   3.4. Data collection schedule
   3.5. Equipment and stationaries

4. Research tool
   4.1. Qualitative – semi structured interview guide

5. Data analysis
   5.1. Overview of the data analysis process
   5.2. A pre-determined list of code

6. Case study report
   6.1. The adopted IT governance practices
   6.2. How the adopted practices influence effective IT governance
   6.3. Current insight from the field
Appendix 3: Research Invitational Letter

Dr. Osama Mansour  
Jönköping University International  
Business School (JIBS)  
Email: osama.mansour@ju.se,  
Tel: +46 36-10 1782  
Date: Feb 12, 2018

General Manager,  
Tanga Urban Water Supply and Sanitation Authority  
P.O. Box 5011, Tanga,  
Tanzania.

RE: MASTER'S DEGREE THESIS: "INFORMATION TECHNOLOGY GOVERNANCE PRACTICES".

We, researchers from Jönköping International Business School (JIBS) at Jönköping University, Sweden, would like to request your organization to be our case study of the said topic in the subject above. The case study will be conducted by our students named Cleophace and Theogene. Our students are members of Information Technology Management and Innovation master's degree program. The aim of this thesis is to broaden our practical experience from the industry on Information Technology Governance practices.

The project will gather information from your Information Technology department, the requested participants from your organization are IT staff. Information will be gathered through telephone interview (between your IT staff and our students). We would like to invite your organization to take part in this research project and help our student to enhance their knowledge and understanding.

The interview question focuses on general practices and will not focus on configuration issues. Your reflections and answers will contribute to our deeper understanding of this important aspect of Information Technology Governance. We do not expect that you will find the questions difficult or be confronted in any way. However, if you find that the discussions make you uncomfortable, you may decide at any time to withdraw your consent and without any disadvantage.
to you. The interviewer will answer any questions that you have about the research at any time before, during, or after the interview.

If you are willing to participate in this study, we would like to know the focal person and his contacts from your IT department who will work with our students during this project.

Together with this letter, I enclose the interview guide and the research consent form

Sincerely

Dr. Osama Mansour (Thesis Supervisor)

+46 76 82 42 984

Student team members:

1) Cleophace Mwaulambo, Email: mwcll620@student.ju.se Skype: Lambotz

2) Theogene Niyonsenga, Email: nithl6eo@student.ju.se Skype: niotheo
CONSENT FORM

MASTER THESIS: INFORMATION TECHNOLOGY GOVERNANCE PRACTICES

Cleophace Mwaulambo, Student. Email: mwc1620@student.ju.se
Skype: Lambotz

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.

3. I agree to take part in the above study.

Note for PI / Supervisory team:
The following statements should be included if appropriate. If not, please delete from the consent form:

Please initial box

4. I agree to the interview / focus group / consultation being audio recorded

5. I agree to the interview / focus group / consultation being video recorded

6. I agree to the use of anonymised quotes in publications

7. I agree that my data gathered in this study may be stored (after it has been anonymised) in a specialist data centre and may be used for future research.

Fadhili Kiyao 12/04/2018
Name of Participant  Date  Signature

Cleophace Mwaulambo 06/04/2018
Name of Researcher  Date  Signature