



UNIVERSITY OF KWAZULU-NATAL

**THE IMPACT OF IMPLEMENTING CRITICAL SUCCESS
FACTORS DURING INFORMATION TECHNOLOGY
OUTSOURCING: ETHEKWINI METROPOLITAN
MUNICIPALITY CASE STUDY**

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**A dissertation submitted in fulfilment of the requirements for the degree of
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**School of Management, Information Technology and Governance
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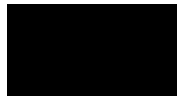
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DEDICATIONS

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ABSTRACT

IT outsourcing is a decades-old practice that has been used by businesses. Organisations engage in this activity because they lack the necessary capabilities in-house to complete the assignment, and it is sometimes more cost-effective to outsource the work to another company. Using Duhamel's Outsourcing Technology Enactment model, the goal of this qualitative exploratory case study was to determine the influence of crucial success variables during IT outsourcing (Duhamel, Gutierrez-Martinez, et al., 2014). Snowball sampling was utilised to find study participants within the participating company who could offer information about the IT outsourcing initiatives. Members of the eThekweni Municipality's IT outsourcing project team served as the sample criteria. Project deputy heads, senior managers, specialists, analysts, developers, and project managers were among the participants in the study. The reason for the limitation is that the researcher was looking for participants that play a huge role and that are able to make managerial decision during IT outsourcing. NVivo Pro 12 research software was used to analyse the interviews. The tool was chosen because it has been widely used by researchers and scholars to analyse data (Syarifuddin et al., 2017).

The result of this case study shows that the study participants from eThekweni Municipality understand the concept of outsourcing and the Municipality uses different types of outsourcing depending on the project to be implemented. The study participants, to a large extent, considered trust, shared knowledge and communication during a project. These factors are all important because they play a different role, they are intertwined. However, it is indicated by two senior participants that trust do not exist in business and the relationship is governed by a contract and a service level agreement. Institutional arrangements at the Municipality delays projects and should be reviewed to match up with the ever-changing IT environment. The outcomes of a project are measured using time, scope and budget. The findings from this study may be used by IT leaders and project teams for future and current projects when deciding to implement IT outsourcing projects.

Table of Contents

List of Figures.....	8
List of Abbreviation	9
CHAPTER 1. INTRODUCTION.....	11
1.1 Background of the study.....	11
1.2 Problem Statement.....	12
1.3 Statement of Purpose	13
1.4 Research Questions	13
1.5 Overview of Methodology	14
1.6 Rationale and Significance	14
1.7 Organisation of the Dissertation.....	14
CHAPTER 2: LITERATURE REVIEW	16
2.1 Introduction	16
2.2 Information Technology Outsourcing	16
2.3 IT Outsourcing in the Private Sector verses the Public Sector	18
2.4 IT Outsourcing in the Public Sector	19
2.5 IT Outsourcing in South Africa (Public Sector)	21
2.5.1 Challenges of IT Outsourcing in South Africa – case studies	22
2.6 Conclusion.....	25
CHAPTER 3: CONCEPTUAL FRAMEWORK: THE OUTSOURCING TECHNOLOGY ENACTMENT MODEL	26
3.1 Background and Context of Conceptual Framework	26
3.2 Conceptual Framework	28
3.3 Relationships Among Constructs	35
3.4 Contribution to the study	38
3.5 Conclusion.....	38
CHAPTER 4: RESEARCH METHODOLOGY	40
4.1 Introduction	40
4.2 Research Approach.....	40
4.3 Research Design	40
4.4 Research Site	41
4.5 Target Population	42
4.6 Sampling and Sampling Technique.....	43
4.7 Data production methods.....	44
4.8 Online Interviews	44
4.9 Process of developing the interview questions	45

4.10	Description of the interview questions	45
4.11	Pilot testing of research instruments.....	46
4.12	Administration of the research instruments.....	46
4.13	Data Analysis.....	47
4.14	Issue of Trustworthiness.....	47
4.15	Ethical Consideration	49
4.16	Conclusion.....	49
CHAPTER 5: QUALITATIVE RESULTS		50
5.1	Introduction	50
5.2	Part 1 Results: IT Outsourcing and its Outcomes.....	50
5.3	Part 2 Results: Extent of Duhamel, Gutierrez-Martinez, et al. (2014) Model Relevance	52
5.3.6	Institutional arrangements limit technology implementation (P10)	62
5.3.7	Measures of a successful project (P9)	63
5.4	Conclusion.....	64
CHAPTER 6: ANALYSIS AND IMPLICATIONS FOR PRACTITIONERS		66
6.1	Introduction	66
6.2	IT outsourcing practices in the IMU.....	66
6.3	Organisational factors as CSF's during IT outsourcing in the IMU	67
6.4	Institutional arrangements as CSF's during IT outsourcing in the IMU.....	70
6.5	Measurement of a project's outcomes in the IMU.....	72
6.6	Conclusion.....	74
CHAPTER 7: CONCLUSION AND RECOMMENDATION		75
7.1	Introduction	75
7.2	Research Questions Concluding remarks	75
7.3	Limitations.....	77
7.4	Future study	77
7.5	Conclusion.....	78
Appendix 1: Consent Letter.....		79
Appendix 2: Matrix		82
Appendix 3: Interview Questions		83
Appendix 4: Ethical Clearance Letter		86
Appendix 5: NVivo Code Report Letter.....		87
Appendix 6: Editors Letter		88
REFERENCES.....		89

List of Figures

Figure 1. Fountain's Technology Enactment Model (Fountain, 2001, p. 36)

Figure 2. Outsourcing Technology Enactment model (Duhamel et. al, 2014, p.14)

Figure 3. Modified Outsourcing Technology Enactment Model

Figure 4: Brief IMU Organogram

Figure 5: Study Population

List of Abbreviation

IT	Information Technology
SA	South Africa
eNaTIS	Electronic National Traffic Information System
SAPS	South African Police Service
CSF	Critical Success Factor
RMS	Revenue Management System
CCT	Compulsory Competitive Tendering
HSSREC	Humanities and Social Science Research Ethics Committee
MILE	Municipal Institute of Learning
IMU	Information Management Unit
BI	Business Intelligence.
ROI	Return on Investment
COVID19	Corona Virus Disease 2019
SONA	State of the Nation Address
ODP	Open Data Platform
SITA	State Information Technology Agency
BEE	Black Economic Empowerment
NWPG	North-West Provincial government
MEC	Member of Executive Council
GRP	Government Resource Planning

Definition of Terms

IT outsourcing: “Contracting with third party service providers for the provision of some or all of an organisation’s IT functions” (Goo & Nam, 2007, p. 2).

Objective technologies: Refers to the “Internet, other networked computing systems and telecommunications, hardware, software, and middleware” (Duhamel, Gutierrez-Martinez, et al., 2014, p. 13).

Institutional arrangements: Consist of the culture of an organisation and its laws and regulations (Duhamel, Gutierrez-Martinez, et al., 2014).

Organisational culture: “A tool kit of symbols, stories, ritual and world-views, which people may use in varying configurations to solve different kinds of problems” (Swidler, 1986, p. 273).

Organisational factors: “Consist of trust, shared knowledge, and interfaces” (Duhamel, Gutierrez-Martinez, et al., 2014, p. 15).

Enacted technology: “The technologies implemented by the outsourcing service provider on behalf of the public organisation for the provision of IT services to implement its missions and Tasks” (Duhamel, Gutierrez-Martinez, et al., 2014, p. 13).

CHAPTER 1. INTRODUCTION

1.1 Background of the study

Information Technology outsourcing was motivated by the private sector in the 1960's by handling various data processing services for Frito-Lay and Blue Cross & Blue Shield (Lacity & Hirschheim, 1993). Nonetheless, it was a contract by Kodak in 1989 with IBM that attracted many other organisations to this way of work (Gantman, 2017; Gill, 2000; Rajaeian et al., 2016). The organisations from the public sector shortly followed the private sector realising the benefits of outsourcing IT under the term “contracting out” in the 1980s (Cox et al., 2011). Currently, IT outsourcing is being practiced by both the public and the private sector, although, previous studies show that the focus have been limited to the private sector (Cox et al., 2011; Park & Lee, 2014; Swar et al., 2012). The lack of research in this area can be problematic for making comparisons. However, it does provide an opportunity to explore a gap in the literature and to discover if anything can be learnt from how IT outsourcing is managed in the public sector. Therefore, this research dissertation has focused on how IT outsourcing is practiced in the public sector.

Information Technology outsourcing continues to appeal to many organisations after so many years of practice and in the process, it is experiencing growth and maturity. This attraction resulted from organisations observing that attempting to do everything internally is more expensive than outsourcing to a third party (Gill, 2000). Technavio (2020), a leading market research company with global coverage forecasted that the IT outsourcing market size will grow by 98 billion US dollars at some point of 2020-2024. This forecasted market's growth momentum will be due to the steady increase in year-over-year growth (Technavio, 2020). However, despite IT outsourcing popularity evidence has revealed that organisations experience a high number of challenges due to many different reasons which will be summarised in the next paragraph and extensively analysed in the literature review.

The news media in the South Africa, frequently produces evidence about the challenges of service delivery, especially in the public sector. According to the Incident Registration Information System (IRIS) from South African Police Service (SAPS, there were 909 protests about service delivery that happened between the period of 1 August 2020 to 31 January 2021 (Martin, 2021). Challenges on IT outsourcing are experienced by various prominent cases in the South African public sector. The projects are: The Electronic National Traffic Information System (eNaTIS) implemented in 2007, the Water and Electricity-billing crisis at the Johannesburg Metropolitan Municipality (2010), the ‘Who Am I Online’ project at the

Department of Home Affairs (2011), and the Revenue Management System (billing system) at eThekweni Metropolitan Municipality (2016). These are some of the examples of IT outsourcing projects that has been challenging for the public sector. The reasons vary from social and technological aspects. There are from getting inexperienced service providers, increasing costs, complex social processes, technological complexities etc. McIvor (2005, p. 12) mentions the importance of documenting the challenges experienced during IT outsourcing in the public sector. The e-Government systems are related with public service delivery, therefore, are always under public scrutiny. The mistakes made and consequences are expensive, and they impact a number of citizens. The public administrators and politicians are embarrassed by the bad exposure.

Documenting a project from start to finish will be beneficial during the Lessons Learnt phase as organisations will know what factors should be considered for the next IT outsourcing project. This is because organisations are always looking for critical success factors that would facilitate the attainment of their organisational objectives once they decided to outsource their IT. Rockart (1979, p. 12) define the concept of critical success factors (CSFs) as “the limited number of areas in which results, if they are satisfactory, will ensure competitive performance for the organisation”. Kim and Chung (2003) identifies satisfaction as a typical measure of success in IT outsourcing research that by and large speaks to the level of customer's satisfaction with the service provider. There are many CSFs reported in the research literature. However, this study will view the CSFs raised by participants through the theoretical lens provided by (Duhamel, Gutiérrez-Martínez, et al., 2014). The relationship of Duhamel's Outsourcing Technology Enactment Model with this research dissertation is through the model's set of the variable and their relationship in the context of outsourcing. These variables include “Organisational factors (trust, shared knowledge, interface), Institutional Arrangements (organisational culture, laws and regulations) and Objective Technology” concepts that will be discussed in more detail in the conceptual model section (Duhamel, Gutierrez-Martinez, et al., 2014, p. 13). This model was chosen for this research dissertation because it remains a theoretical one, therefore, this study will look at using it as an analytical tool for understanding eThekweni Municipality's IT outsourcing.

1.2 Problem statement

The fast-growing change in technology has caused IT outsourcing in the public sector to increase. Fountain (2001) said the momentum of change and having to retaining all necessary in-house resources and capabilities has made it harder on organisations to stay abreast. Despite

their popularity, there are challenges that organisation face during IT outsourcing. In the public sector, these challenges have a tendency to pull in more prominent public attention because of political responsibility, and triumphs regularly goes unnoticed (Singh, 2018).

Critical success factors have been proposed in the broader literature that organisations should follow during IT outsourcing projects in the public sector to ensure its success. However, these outsourcing practices are tailored for use by the private sector (Junghoon Moon et al., 2016; Gantman & Fedorowicz, 2020). This is because there is little literature that looks at how the public sector outsource their IT and most importantly that document practices that can assist the public sector. This study will therefore look at the critical success factors proposed in Duhamel's research. The model proposed in Duhamel is chosen because the study is theoretically written and therefore, there is a gap to practically contextualise the theory. In addition, the challenges and lack of research seen in the public sector (Cox et al., 2011; Junghoon Moon et al., 2016; Swar, Moon, Oh, et al., 2012) has fuelled the researcher with enthusiasm to conduct this study.

1.3 Statement of purpose

This model remains theoretical since no evidence of this model having been tested in a practical context could be sourced in the literature. Based on Duhamel's model, the author looked at CSFs that may give to the success of a project. Evidence has revealed a high number of outsourcing challenges for the public sectors due to government organisations using private sector outsourcing practices (Junghoon Moon et al., 2016 ; Gantman & Fedorowicz, 2020). Duhamel's study focuses on the public sector, hence the choice of utilising his model.

1.4 Research questions

The aim for this study is to make use of the Outsourcing Technology Enactment Model which is proposed by Duhamel, Gutierrez-Martinez, et al. (2014) that has emerged from Fountain's study in 2001 and to practically contextualise the model. The overarching research question is: What is the impact of implementing CSFs in the public sector during IT outsourcing. The main question is then dissected into four research questions using the conceptual framework factors: organisational factors, institutional arrangements and Outcome. Below are the research questions.

1. How do eThekwini Municipality's Information Management Unit employees practice IT outsourcing?
2. To what extent do eThekwini Municipality's Information Management Unit employees consider organisational factors (trust, shared knowledge and interface characteristics) as

critical success factors in an IT outsourcing relationship?

3. To what extent do eThekwini Municipality's Information Management Unit employees consider institutional arrangements (Organisational culture and laws and regulations) as critical success factors in an IT outsourcing relationship?
4. How do eThekwini Municipality's Information Management Unit employees measure the project outcome a success or Failure?

1.5 Overview of methodology

A single case study design is used in this study because the research is focusing in one organisation and therefore requires extensive research and exploration, hence, the chosen method. Interviews were conducted using an online platform, Zoom (<https://zoom.us>), due to Covid19 restrictions. A snowball sampling technique was used during this process. The interviews were recorded as text and audio and participants were made aware and most importantly asked for consent. Consent letter is attached in the Appendix 1: Consent Letter. The interview transcripts were thematically coded. Questions such as “do you understand, do you want the researcher to make an example” were one of the questions used to validate the data. a pilot member check strategy was used. The interview questions of the study are attached in Appendix 3: Interview Questions.

1.6 Rationale and significance

This research adds to the current body of information in the topic of Information Technology outsourcing, particularly in the public sector. It will provide data coming from IT resources that have experience working in the public sector. The data from the study participants are filled with knowledge and interest on making things work better for the public sector. One of the e-government project challenges come from this organisation. The eThekwini Revenue Management System (RMS), which was meant to be a reducing cost for eThekwini ended up costing the Municipality a significant amount of money. Additionally, on top to the over R1 billion already spent on bringing out the Revenue Management System, the Municipality is paying experts R1.5 million each month to run the system (RMS) (Singh, 2018). This study will benefit the IT decision makers who plan to outsource their IT, the ones currently outsourcing and for those who have outsourced their IT. Technavio (2020), has forecasted the growth of IT outsourcing market by USD 98 billion during 2020-2024. This means there is still research that will be needed by organisation to make IT outsourcing successful.

1.7 Organisation of the dissertation

This research dissertation has seven chapters. Chapter 1 served as an introduction to the study.

The backdrop of IT outsourcing, the problem description, the research questions, and the study's significance are all covered in this chapter. The examination of literature in Chapter 2 will include an overview of IT outsourcing in general, as well as an emphasis on IT outsourcing in the public sector in the context of South Africa. The theoretical underpinning for Chapter 3 will be the Outsourcing Technology Enactment model, which was developed by Duhamel. The qualitative research method and the exploratory single case study design will be discussed in Chapter 4. The study's findings will be discussed in Chapter 5. The research questions will be answered in Chapter 6 in connection to the data from the interviews. The final chapter will cover the overall responses to the research topics, as well as the limitations and future research recommendations.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The aim of this chapter, without including new work, intended is to coordinate and summarize the arguments and ideas of existing knowledge in a specific field. As such, Chapter 2 focuses on reviewing how organisations outsource their IT. This will be done, firstly, by looking at IT outsourcing in general, and then look at IT outsourcing similarities and difference in the public and private sector. The chapter will then focus on IT outsourcing in the public sector in general and also in the South African context.

2.2 Information technology outsourcing

The United Kingdom government proposed compulsory competitive tendering (CCT) in 1980. According to Rimmer (1994, p. 78), “this involves government or firms using a competitive bidding process to help decide who should have the right to produce or deliver goods or services within the public sector”. The CCT, and other terms such as ‘contracting out’, have been used interchangeably by the public sector; making it difficult for researchers and practitioners to differentiate between outsourcing, contracting out and CCT (Khalfan & Gough, 2001). In this study, “information technology outsourcing is defined as contracting with third party service providers for the provision of some or all of an organisation’s IT functions” (Goo & Nam, 2007, p. 2). Clients can outsource technical projects, procedures, processes, and other associated services that are critical to the functioning of their businesses. Dahlberg and Lahdelma (2007) go even further in their definition, pointing out that the scope of IT outsourcing has shifted from technical to service and relationship management. At the eThekweni Municipality, the term IT outsourcing is used interchangeably with contracting-out and tendering, which is achieved through a competitive bidding process (Petersen, 2016).

According to Hlawu-Chihwenga (2013) and Vandaele and Lambrecht (2007), there are four main types of IT outsourcing strategies: single-sourcing, multi-sourcing, co-sourcing, and a combination of multi-sourcing and co-sourcing. The authors do not mention whether the type of outsourcing are relevant only to one sector. Furthermore, Weinert and Meyer (2005) found that there is not only one single type of IT outsourcing as it is heterogeneous and can take various forms, depending on the nature of the IT provider. Single sourcing depends on a single supplier to provide all or most of the IT services. According to Komen (2017), diligence is required in the whole single sourcing process because of its very complex in nature. This is because of the selection and evaluation process. Multi-sourcing is when the organisation selects the right mix

of service providers for the provision of IT services. This type of outsourcing provides the client with the opportunity to choose the best service providers, that will produce coherent services to an organisation. This will assist mitigate the risk of the whole system failing because of one partner's inability to complete part of the project (Łoboda, 2013).

Co-sourcing is when the client works together with the service providers, under one relationship model, to deliver services to the client. Often, one of these providers is internal and the other is external. This model is used when a project's scope is larger than one service provider can deliver. Partially outsourcing activities or functions will bring about a balance of power in the organisation (Badenhorst-Weiss & Nel, 2008). "For some IT services, co-sourcing has been shown to result in the most successful outsourcing arrangement as some of the skills and ability to innovate are retained with the client" (Wisner et al., 2008, pg. 116), Hybrid-sourcing (multi-sourcing and co-sourcing) is when the organisation pools its IT requirements and resources together with another organisation's and selects the right mix of suppliers for the provision of IT services. These definitions show that single-sourcing and multi-sourcing are highly dependent on the organisation's suppliers, whereas the latter (co-sourcing and hybrid-sourcing) work in partnership with suppliers to achieve one goal.

During IT outsourcing, there are several critical factors found in the research literature that organisations should consider, as they ensure success in IT outsourcing projects. Critical success factors (CSFs) incorporates all the activities, processes, and practices that should be reviewed to ensure successful management and maintenance (Kumaraswamy, Ling, Rahman & Phng, 2005). The CSFs must be thoroughly investigated by an organisation so that they can be assessed against the organisation's objectives, and readjusted if needs be to improve performance (Hlawu-Chihwenga, 2013). Factors such as trust; communication; shared knowledge; contracts and organisational culture are viewed as the most-used determinants of a successful outsourcing project (Cullen et al., 2006; Duhamel et al., 2014; Fountain, 2001; Gonzalez, Gasco & Llopis, 2015; Park & Lee, 2014). These factors are discussed in Chapter 3.3 under conceptual framework. Having looked at the history of the term 'outsourcing' and the types of outsourcing and CSFs, in the next section this study will focus on IT outsourcing in the public sector, globally. The next section will look at the similarities and differences in IT outsourcing between the public and private sector so to provide the reader with a brief comparison of the sectors and why this study opted to focus on the public sector.

2.3 IT Outsourcing in the private sector versus the public sector

It is important to look at the differences and similarities between the public and private sector before the researcher rigorously focuses on IT outsourcing in the public sector, specifically in the South African context. Literature has shown that there are similarities and differences in the way IT is outsourced in the two sectors. Vilovsky (2008, p.338) made mention that although the two sectors share some similar values in terms of “responsiveness, honesty and accountability” they also have some notable differences. Both the sectors are divided both “ideologically and operationally” (Vilovsky, 2008, p.338). The public sector is motivated by financial performance, and it is also constrained by political accountability. For example, the public sector is legally required to outsource any activity that can be done cheaper by outside contractors, as long as they meet the minimum specifications (Burnes & Anastasiadis, 2003). The private sector, in contrast, has more choice over whether they outsource and to whom and can therefore do so more strategically and approach the best suppliers directly (Lin, et al, 2007). Furthermore, the politicians often believe that outsourcing will automatically save money whereas in reality outsourcing either has failed or has yet to show any real benefits (Cox et al., 2011).

The media has made it clear that the public sector is facing challenges when they outsource their IT because the information is easily available. One may assume that the private sector is far from experiencing these challenges. However, Hlawu (2013) argues that this is far from the truth. It is very difficult to acquire this type of information from the private sector due to a number of reasons like the need to self-preserve brands and the non-disclosure agreements which would have been signed prior to govern the pre and post relationship (Hlawu, 2013). Marketa et al. (2011) collected data that analysed outsourcing experience in both the public and private sector in Czech Republic. The authors concluded that the private sector was only slightly better compared to public practices of outsourcing in the Czech Republic (Marketa et al., 2011). Even private managers, especially in small and medium firms, do not have sufficient knowledge and skills to manage outsourcing decisions and operations (Marketa et al., 2011). As indicated in Chapter 1 Section 1.3, Gantman & Fedorowicz, (2020), when the authors analysed data from eighty-two collaborative projects in the public sector found that the public sector uses private sector outsourcing practices when outsourcing. Marketa et al. (2011) study found that the private sector approaches were not commonly used as examples of best practice and direct learning source because many of them are not sufficiently aware about the complexity of outsourcing processes and tools to deal with it (Marketa et al., 2011). The differences in conclusion could be due to a lot of factors, namely, the time when the research was done, the countries

socioeconomic state, among others. The researcher further looked into the socioeconomic status of the countries. It was found that Marketa et al., (2011) study was conducted in Korea and the country was at that time in the developing country category. Gantman & Fedorowicz (2020) study focused on the United States, developed country, and the district of Columbia. Although the District of Columbia falls under the developing country category it ranks higher than most of the other countries in its category (Depersio, 2020; Jee-Hee, 2021).

It is clear from the comparison of the public and private sector that there are some difference and similarities in the way they outsource IT. Furthermore, the private sector is not immune to the challenges the public sector faces such as ballooning cost, project management, among others, when it comes to the successful implementation of IT outsourcing. The challenges faced by the private sector are not easily accessible, and because of this, the researcher made use of the public sector information that is available to find out how IT is outsourced in government, hence the choice of sector. Although maintaining a good brand reputation is important but having IT outsourcing case studies from the private sector easily available about issues and challenges the sector faces will not only provide the researchers with data during research but will most importantly assist organisation to mitigate repeating the same mistakes made by other organisation through these experiences. The next section will look at how IT is outsourced in the public sector in detail.

2.4 IT Outsourcing in the public sector

The public sector is constantly looking for new ways to offer required services, save costs, and identify new sources of infrastructure investment funds (Linder, 2004). Information technology outsourcing has been one of the innovative solutions that government has turned to. However, some people think outsourcing works more like a political football than a sensible management tool (Linder, 2004). This is because those who are paid to gain and wield power in order to influence organisational goals use it to pursue their own aims and interests (McIvor, 2005). When opposed to IT outsourcing focused on the private sector, scholarly literature on IT outsourcing in the public sector has yet to be completely explored (Josep & Joan, 2020; Gantman & Fedorowicz, 2020). The literature indicates high rate of failure of IT outsourcing projects in the public sector (Sullivan & Ngwenyama, 2005; Vintar & Stanimirovic, 2011), and managing the projects successfully is challenging and susceptible to pitfalls (Gantman & Fedorowicz, 2020).

Between 2010 and 2017, Lacity et al. published two research articles that combined 1170 findings to create a robust model of IT outsourcing decisions and outcomes (Lacity et al., 2017) Their research is the most thorough examination of outsourcing literature to date (Gantman &

Fedorowicz, 2020). Although the research found mixed results on the transition from economic to strategic factors as the main motivation for IT outsourcing in the public sector, empirical evidence suggests that sourcing decisions are complex, with cost savings being the most important determinant of IT outsourcing decisions. During IT outsourcing, cost-cutting remains a legal duty (Burnes & Anastasiadis, 2003; Alaranta & Jarvenpaa, 2010). Alonso et al. (2017) used a panel data model to investigate 25 European countries from 1990 to 2011, and found that outsourcing did not cut government spending. Outsourcing, in reality, leads to a rise in government spending (Alonso et al. 2017). The authors discovered that the government believes outsourcing saves money because they feel the private sector can handle the task more efficiently. Furthermore, citizens would profit in two ways: they would receive higher-quality public services while paying less tax to fund the initiative (Alonso et al. 2017).

Cox et al. (2011) used four local government towns in the United Kingdom to perform an in-depth study on how outsourcing is managed in the public sector. They evaluated how successful it has been, especially in light of its sometimes-contentious nature and uneven press coverage. According to their findings, towns that focus solely on cost cuts are frequently less successful (Cox et al., 2011). This is because there are hidden costs that arise during the project's various phases: selection, contract administration, and contract revisions, all of which might cancel out any cost savings found at the outset of the outsourcing contract. A focus on long-term strategic goals was more successful in municipalities (Cox et al., 2011).

To mitigate the risks associated with outsourcing, a well-written contract or Service Level Agreement (SLA) is essential. Nonetheless it is impossible to cover every aspect in the contract, particularly when needs change. Municipalities that focus mainly on the contract barely succeeded as compared to those who grew their partnerships with the service providers. Cox et al. (2011) said that in order to be more effective, towns should form partnerships, focus on best value, and have faith in their ability to manage the contract successfully. A case study by Sun et al. (2014), about the partnership between an Australian public sector and a service provider to develop Australia's standard business reporting infrastructure, also found it impossible to manage the relationship via only a single contract. Instead, both parties emphasised that there should be knowledge sharing and joint activities. The Australian government established a forum where industry stakeholders were encouraged to share ideas that could be used to improve the infrastructure.

Once all the variables have been incorporated into the project, the end goal is to deliver a successful project. The criteria used to evaluate IT outsourcing outcomes vary in different studies. Teo and Bhattacharjee (2014) said satisfaction with the IT outsourcing relationship was the most agreed-on criterion. Yaacob and Yatin (2012), also agreed with this, and added that for customers to be satisfied, the quality of the service offered comes first. The next section will narrow the IT outsourcing research to focus on the public sector in South Africa

2.5 IT outsourcing in South Africa (public sector)

In South Africa, the government is making a concerted effort to foster black-owned firms, with procurement legislation and policies in place to boost BEE (Badenhorst-Weiss & Nel, 2008). The BEE idea was developed in the early 1990s with the goal of empowering groups and individuals who had been harmed by the former apartheid system (Ponte et al., 2007). Industries in SA, when deciding to outsource, are expected to also tackle the economic inequality that was systemically orchestrated through the apartheid era (Mncube, 2007). There are many factors that can make outsourcing successful. Badenhorst-Weiss and Nel (2008) mention that appointing the right service provider is very important. Six world-class providers were approached, but the final decision was made based on the service provider's readiness to contribute to BEE (15 percent BEE equity and relationship with a BEE company), according to the authors (Badenhorst-Weiss & Nel, 2008).

The Member of the Executive Council (MEC) for the Treasury Department highlighted a SLA that needs to be signed with the State Information Technology Agency (SITA) to better the working relationship, as required by the SITA Act (88 of 1998), in a 2010/2011 budget speech (Mavetera et al., 2014). This meant the public sector was obligated to outsource their IT to SITA. Mavetera et al. (2014) decided to research SITA's performance with regards to IT outsourcing, as well as NWPG outsourcing practices. The authors found that SITA has suffered negative reporting from the media. Additionally, information from the study participants suggested that, although the purpose of IT outsourcing and its processes were understood, there was no IT outsourcing strategy, and no adopted framework or outsourcing structure for IT outsourcing was being followed by the NWPG. Furthermore, there was a lack of efficient and transparent communication channels about outsourcing between the NWPG, IT employees, and management, as well as no outsourcing plan with details on the transfer of assets, people, information, knowledge, hardware, and software (Mavetera et al., 2014).

Another article on outsourcing methods in the government sector in South Africa was authored by Badenhorst-Weiss and Nel. The goal of the research dissertation was to give an overview of public-sector service outsourcing to the private sector as a potential remedy to government institutions' poor service delivery. The authors discovered that the outsourcing tool is already being utilised efficiently by the public sector to provide community services, and that these tasks are generally outsourced in an effort to increase cost-efficiency and services while focusing on core activities (Badenhorst-Weiss & Nel, 2008). However, data has revealed that the tool needs to be extended to more strategic operations, with risks and long-term repercussions taken into account, due to "insufficient technology" (Badenhorst-Weiss & Nel, 2008).

It is important to note that there is limited IT literature about outsourcing in SA. The vast majority of the literature is on general outsourcing activities in SA. A literature search also indicated that there is more IT outsourcing research literature on the public sector than on the private sector in South Africa (Badenhorst-Weiss & Nel, 2008; Hlawu-Chihwenga, 2013; Mavetera, Moroke, & Mtotoba, 2014). However, internationally there is more IT outsourcing literature on research in the private sector than the public sector. Moreover, recent research literature in SA is mostly about offshoring (Omoju, 2017; Baidoo, 2014; Hintringer, 2012; John, Guynes & Cline, 2015). Offshoring, as defined by Jain Palvia (2005), is categorised as a type of outsourcing by other authors. Offshoring is simply moving all or part of your work to another country with cheaper labour (Roberts, 2014). South Africa is seen as one of the most attractive destinations for offshoring (Bodri, 2009). The reason for this attractiveness is SA's linguistic, cultural and product affinity with the USA, UK and Europe (SSF-Team, 2007). South Africa is also a high-quality, low-cost destination for offshoring (SSF-Team, 2007).

In a developing country such as SA, with a large poor population and social inequalities, there is pressure on the public sector to provide service to its citizens. The reality is that there is daily evidence from the media in SA of the breakdown of service provision in the public sector. Therefore, the next Section (2.4.1) will look at various prominent cases in the SA public sector that have had challenges with IT outsourcing.

2.5.1 Challenges of IT outsourcing in South Africa – case studies

“There is currently evidence of the public's dissatisfaction with service delivery by some government institutions in South Africa” (Badenhorst-Weiss & Nel, 2008, p. 619). It is based on quotes like these and others that this section will look at various prominent cases in the South African public sector that are experiencing challenges with IT outsourcing. These challenges are

experienced in different municipalities and departments: the water and electricity crisis in the Johannesburg and eThekweni municipalities, the electronic National Traffic Information System (eNaTIS) from the Department of Transport, and the “Who Am I Online” project from the Department of Home Affairs.

Johannesburg water and electricity billing

The Johannesburg water and electricity billing crisis began in 2005, when a contract was awarded to a third-party service provider who was allegedly inexperienced (Hlawu-Chihwenga, 2013). It was then decided by the authorities to partner an experienced service provider with the inexperienced service provider. However, the partnership did not work (Hlawu-Chihwenga, 2013). The inexperienced service provider went into liquidation and had two big subcontractors who were now primed to take over the contract (Hlawu-Chihwenga, 2013). Neither subcontractor was happy to partner with the other. The never-ending dilemma was an albatross around the council's neck and had far-reaching consequences for its customers, as the city residents were now receiving inflated bills, incorrectly generated by the systems. The National Consumer Commission had to step in to resolve the billing problems by issuing 45 compliance notices regarding incorrect accounts and estimations for both electricity and water usage (Lindeque, 2021). What is clear from this case is the type of outsourcing used, that is multi-sourcing. However, the issues and problems arose because there had been no due diligence done on the service provider who was awarded the contract. What needs to be learnt from this case is that the selection and evaluation of the service provider in outsourcing is important.

The eThekweni Municipality's billing system

Another case is that of eThekweni's Revenue Management System (RMS) project that was outsourced to RAMCO. The project was initiated in 2002, when the city decided to replace the COINS billing system with RMS; with a budget of R90 to R150 million (Tribune, 2016). In 2006, 2008 and 2010 the budget increased to R250.8 million, R408 million and R488.5 million, respectively (Manda, 2015). An additional R15.6 million contract was awarded to a service provider in 2015 to oversee the project's implementation (Manda, 2015). Allegedly, the same service provider, based in India, was being paid R1,5 million monthly by eThekweni to run the system (Shaikh, 2018; Magubane, 2019). The R1 billion system has frustrated the eThekweni ratepayers, with allegations of incorrect billing in their statements. (Magubane, 2019). The continually ballooning costs have raised concerns among eThekweni residents. This case of the RMS system from eThekweni shows a lack of proper project management, as well the type of outsourcing used for this major transformation. In the literature, Loboda (2016) says if the

project is big, the client should consider using multiple service providers to implement the project to lower the risk of the whole project failing because one service provider is unable to complete their part in the project; and most importantly, to prevent them from overcharging the client.

The electronic National Traffic Information System (eNaTIS)

In 2007, the electronic National Traffic Information System (eNaTIS) went live. The Auditor-General, however, informed the Department of Transport a month before the implementation of eNaTIS that it was faulty and doomed to fail, with an 80% chance of failure (Naidu, 2007). The department, on the other hand, decided to go forward with the R594 million system (Naidu, 2007). According to the official eNaTIS website (www.enatis.com), the system had to be shut down for more than two hours in order to alter numerous database parameters (Naidu, 2007). Proper project management, security in the form of disaster recovery management and who has valid access to the system, and rigorous testing of the system before final deployment are all critical lessons acquired during the early stages (Vecchiatto, 2008). It is clear from the eNaTIS case that the system was improperly tested and hastily implemented, and this was due to factors such as project management that was not thoroughly executed. ~~This study looks at various critical success factors, including looking at what factors contribute to the success of a project. A question was asked to the study participants, and the responses can be found in Chapter 5.~~ The eNaTIS system went from being an improperly tested system to a legal battle between the system developer and the department of Transport in 2015 with the system developer claiming 33 million from the department for services rendered (Mabuza, 2018). The Constitutional Court ruled the claim invalid, and the system developer was asked to vacate the department premises (Mabuza, 2018).

The “Who Am I Online” project

The “Who Am I Online” contract, which was awarded to a service provider to revamp the Department of Home Affairs’ systems and improve security, is another case where outsourcing failed. There were misaligned expectations between the client and the service provider (Hlawu-Chihwenga, 2013). This resulted in costly consequences running into billions of rands. The department spent R1.4 billion between 2007 and 2012, as well as R835 million on an out-of-court settlement arrangement with the IT outsourcing service provider in question (Hlawu-Chihwenga, 2013). The case of “Who am I Online” indicates the importance of a regular flow of information during a project, so that the client and service provider are aligned. This study investigates the importance of shared knowledge and communication during a project. Unfortunately, in this case the absence of these factors cost the department a lot of money.

What is clear about the cases mentioned above are the constant tussles between the clients and the consultants. The tussles are an indication of IT outsourcing processes not properly thought through. These cases also show that the reasons for challenges with IT outsourcing projects are varied, complex and contested, as well as expensive. Hlawu-Chihwenga's (2013) explanation of these cases did not go as far as looking at factors that could have contributed to the organisations' successful use of IT outsourcing.

2.6 Conclusion

Chapter two looked at the history of the term 'outsourcing' and the former term used by the public sector when referring to outsourcing. Four types of outsourcing were used and referenced in this research dissertation because they were the most referenced type of outsourcing in most papers. There are several CSFs found in the literature, however, there were some CSFs that were most referenced in the literature of which Duhamel had a model for. This model is looked at in Chapter 3.2. The researcher highlighted the differences and similarities the public and private sector has when outsourcing their IT. The municipalities in UK, a first world country, found that focusing solely on cutting cost when outsourcing was less successful than municipalities that focused on long-term strategic goals. The Municipality in SA, a third world country, demonstrated evidence that focusing on cost saving and lacking proper project management on projects ended up costing eThekweni Municipality a significant amount of money during the Revenue Management System (RMS) project. Sun et al, (2014) study on the Australian public sector also affirm that in order to be more effective, towns should form partnerships, focus on best value, and have faith in their ability to manage the contract successfully. Various South African public sector prominent case studies were also discussed. The next chapter will look at the conceptual framework.

CHAPTER 3: CONCEPTUAL FRAMEWORK: THE OUTSOURCING TECHNOLOGY ENACTMENT MODEL

3.1 Introduction

Chapter 3 will briefly look at the inception of Duhamel's model. The researcher will then proceed into details by discussing the modified version of Duhamel's model as well as explaining the relationship these variables have with each other.

3.2 Background and context of conceptual framework

The Technological Enactment Model was first introduced by Fountain. The model emphasises the influence of organisational factors and institutional arrangements on the design, development, implementation and use of technology (Fountain, 2001). The author's work elucidates the complex collection of activities and individuals that determine how information, communication, and technology are implemented in the American public sector. 'Objective technologies,' according to Fountain's paradigm (Figure 1), are material systems such as hardware, software, network capacity and capability, web applications, or communications systems (Fountain, 2001). 'Organisational forms' refers to bureaucratic aspects and networks, as well as traits like centralisation and formalisation, as well as communication channels (Fountain, 2001). Fountain divided institutional arrangements into four groups: cognitive, cultural, sociostructural, and governmental. (Fountain, 2001).

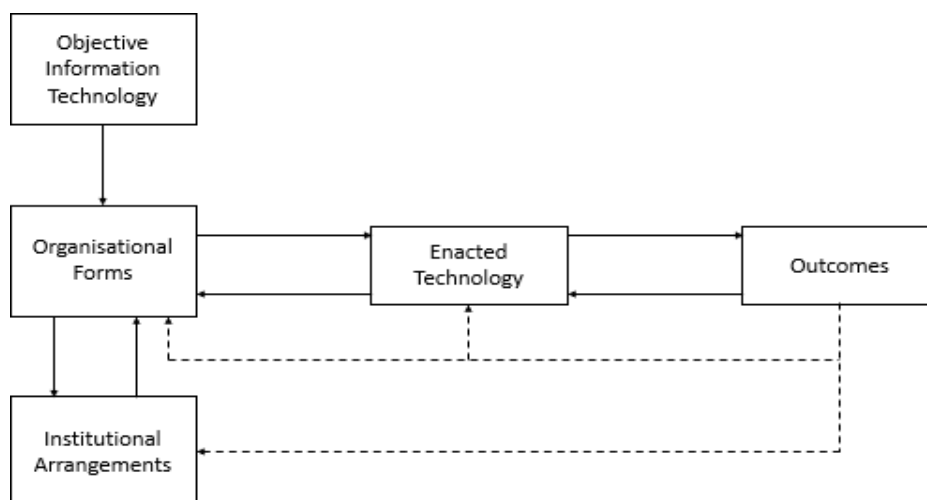


Figure 1: Fountain's Technology Enactment Model (Fountain, 2001, p. 36)

The mental habits and cognitive models that influence behavior and decision-making are referred to as cognitive institutions (Fountain, 2001). The shared symbols, narratives, meanings, and other signals that make up culture are referred to as cultural institutions (Fountain, 2001). The social and professional networked interactions among professionals that constrain behavior through obligations, history, commitments, and shared tasks are referred to as socio-structural institutions (Fountain, 2001). The laws and governmental restrictions that limit issue solving and decision-making are known as governmental institutions (Fountain, 2001). Institutions can direct activity, but they can also limit it (Fountain, 2001).

Organisational variables and institutional frameworks, according to Fountain, filter objective technologies into enacted technologies. Enacted technologies provide a set of outputs (outcomes), which are primarily measured in terms of efficiency, effectiveness, and transparency (Duhamel et al., 2014). In a cyclical manner, enacted technology and the resulting organisational outcomes influence organisational characteristics and institutional configurations (Duhamel et al., 2014). In 2014, the model was extended by Duhamel through the integration of components related to the organisational factors. According to their concept, organisational variables and institutional arrangements play a significant impact in the success of public-sector IT outsourcing contracts. Duhamel's outsourced technology enactment model is shown in Figure 2.

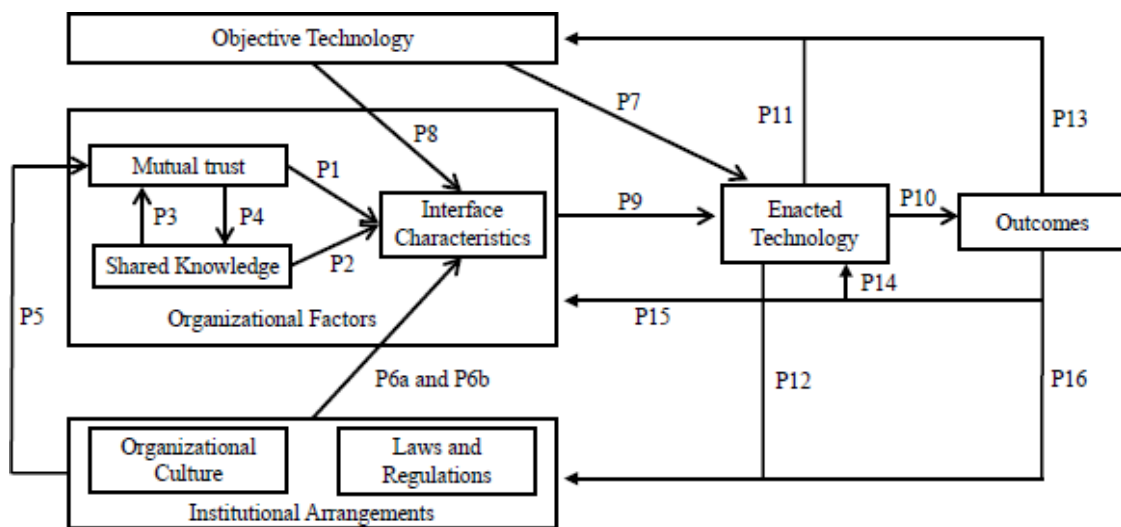


Figure 2: Outsourcing Technology Enactment model (Duhamel et. al, 2014, p. 14)

Duhamel's study generated a set of empirically testable propositions in the context of outsourcing relationships between the client (public sector) and service provider (labelled P1 to P16). Upon analysing Duhamel's model, the researcher found some of the relationships between variables to

be unclear and there was not much information about why Duhamel assumed a relationship between some variables. Section 3.2 will define the variables of this conceptual model and explain their relationships. This study took Duhamel's model and modified the relationships between variables to create a model that would be most suitable for this study.

3.3 Conceptual framework

This section will discuss in detail the modified version of Duhamel's model. The section will also discuss relationships that are unclear from Duhamel's model in the constructs discussion to follow.

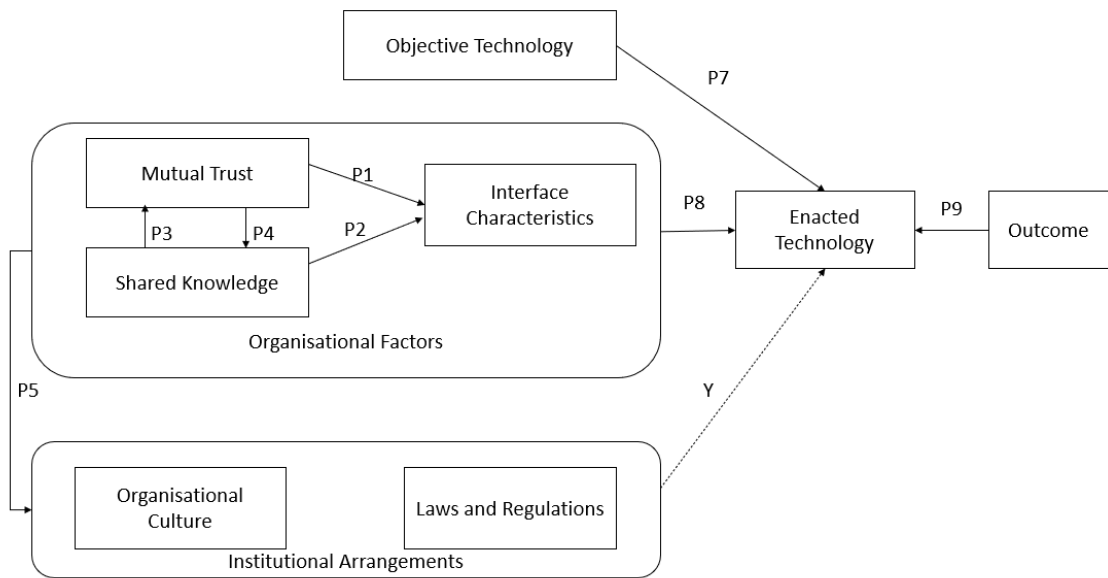


Figure 3: Modified Outsourcing Technology Enactment Model

Objective technologies, enacted technology and outcomes

Objective technologies include the internet, hardware, software, and other digital telecommunication (Duhamel et al. 2014). For example, when describing a government resource planning (GRP) application as an objective technology, it is the collection of modules and functions that can be included in the application that constitute the objective technology (Duhamel et al. 2014). Enacted technology consists of the perceptions of users, as well as designs and uses, in particular settings (Duhamel et al. 2014). In this study it represents the technologies implemented at the end of the outsourced project. 'Outcomes' in this study are the end results of the project. Measuring the success of a project once it has been brought to completion is a valuable practice. It provides a learning opportunity for future undertakings and the opportunity to assess the true effectiveness of the project (Eskander, 2018). Al-Shaaby and Ahmed (2018) analysed the

most important criteria for measuring the success of a project. The authors found four criteria listed in order of their significance: time; quality; cost and scope. Before the outcomes of a project are discussed, there are other important factors that play a role during the implementation phase; these factors will be discussed in the following paragraphs.

Organisational factors

Organisational factors consist of mutual trust, shared knowledge, and interface characteristics. These three factors will be discussed at length in the following paragraphs.

Mutual trust

Trust has become a steadily more important issue in IT outsourcing success (Samaddar & Kadiyala, 2006). Zaheer and Venkatraman (1995, p. 387) defined trust as “the extent to which negotiations are fair and commitments are upheld; and one party’s belief that its requirements will be fulfilled through future actions undertaken by the other party”. Trustworthiness reflects the level of trust that the trustor (client) places in the trustee (service provider) (Alwahdani, 2017). In order to achieve the expectations and accomplishments of an outsourcing relationship, the organisation must trust the outsourcing service provider. Hlawu-Chihwenga (2013) found trust between a service provider and a client to be a leading critical success factor in IT outsourcing. Clients and service providers feel a sense of anticipation and worry about how the new relationship will work when trust is at its initial, fragile stage (Kipkosgei et al 2020). Söderström and Lennerholt (2007) proposed a framework that would identify how trust is achieved in an IT outsourcing relationship from a theoretical perspective. The framework can be used as a guiding principle to describe the process of how to achieve trust in IT outsourcing relationships within the areas of contract, culture, and security (Söderström & Lennerholt, 2007). The author found trust to be an outcome of other variables, such as contract, culture and security; which are variables that are also examined in this study. However, in this study variables such as culture and the outsourcing contract, as contained in the model, are positioned as having a relationship with trust. These relationships will be discussed in depth in Section 3.3. By having a positive impact during a project, trust may be a variable as an outcome of other variables.

Shared knowledge

Knowledge is considered the most strategically important resource, not only for learning but for productivity in an organisation; therefore, this knowledge must be managed and utilised accordingly (Kipkosgei et al, 2020). Shared knowledge is defined as “the provision of task information and know-how to help others and to collaborate with others to solve problems, develop new ideas, or implement policies and procedures” (Jarvenpaa & Leidner, 1999 p. 10). J.-N. Lee (2001) examined the relationship between shared knowledge and outsourcing success.

The author tested this using a sample of 195 public sector organisations in Korea. The research found that a key source of successful shared knowledge is when organisations acquire the necessary knowledge from each other (J.-N. Lee, 2001). Shared knowledge is two-way communication that benefits the knowledge seeker as a learning experience, and the knowledge sharer by strengthening their skills (Kipkosgei et al., 2020). Swanson et al. (2020) explored the effect government outsourcing has on employee job satisfaction at the organisational level, while exploring the results of encouraging knowledge sharing among employees in an organisation. The results of the study, analysing the United States Federal Agency data from 2010 to 2017, revealed that government outsourcing can improve employee job satisfaction through internal management practices, such as promoting knowledge sharing among employees. In this study, trust is seen as having an impact during a project, working well with other variables such as mutual trust and communication to bring about a successful project. Shared knowledge was found to have a positive impact by the above authors. The impact of shared knowledge is discussed in detail in Section 5.3.4.2.

Interface characteristics

Interfaces can be defined as organisational devices linking the service provider and the client. In this study, ‘communication’ is used interchangeably with ‘interfaces’. The devices or communication channels are used for sharing knowledge and these devices can be steering committees, intranet forums, or any other channels used for communication. An organisation’s use of interfaces might be crucial to its success because media richness has been found to influence team effectiveness; efficiency; communication; commitment; and relational quality (Kipkosgei et al., 2020). The lack of efficient and open communication during outsourcing can lead to project failure (Mavetera et al., 2014). This was a concern raised by the NWPG employees when a study was conducted to assess their IT outsourcing practices. According to Mitkus (2014), communication between the client and service provider is affected by many factors, such as a lack of trust and inadequate responsibility, which cause misunderstandings between the two parties during the outsourcing process, and can lead to conflict. Other authors state that the success of communication also relies on active participants (Gottschalk & Solli-Sæther, 2005; Hlawu-Chihwenga, 2013; Ram & Corkindale, 2014). In this conceptual model, communication is shown to have an impact on mutual trust and shared knowledge.

Institutional arrangements

Understanding IT outsourcing issues in public organisations helps highlight the impact of characteristics such as organisational culture, and laws and regulations, on the patterns of decision making (Duhamel et al., 2014; Gantman, 2014; Marshall, Ambrose, McIvor & Lamming, 2015). The following paragraphs will explore the institutional arrangements in terms of organisational

culture and laws and regulations.

Organisational culture

Culture is a powerful human reality that is an integral part of what it means to be a human being in a specific place, at a given point in time (Kieczka, 2020). The complexity of culture applies to individuals, groups and corporates (Kieczka, 2020). In the corporate world, organisational culture has been defined as the set of values and beliefs; patterns; symbols; rituals and myths that characterise a company during a specific historical period (Schein, 1985; Hatch, 1993; Arayesh et al., 2017; Yang and Hsu, 2010). It is unique to each organisation because it includes tradition; shared values and beliefs; and shared expectations about organisational life, and refers to the present as well as the future (Popoli, 2017).

The organisational culture of the client and the service provider is critical during outsourcing (Kieczka, 2020). Yet, the management of different people of different cultures, and understanding the influence that culture plays in influencing the practical success of an outsourcing relationship, does not have the support of many leaders (Kieczka, 2020). This means that when a decision to outsource is made, the human factor is not considered; it is forgotten that this factor is crucial in generating revenue for the business. Kvedaraviciene and Boguslauskas (2010) said that not identifying cultural differences between parties is one of the main obstacles to a positive performance. When two organisations that have different organisational cultural backgrounds come together to implement a project, the differences can cause challenges during the project. The more the two parties reveal their cultural differences, the more difficult it becomes to manage the relationship, both in the planning phase and in the ongoing management phase (Popoli, 2017). Popoli's study further states that the importance of cultural differences depends on the chosen method of outsourcing. When an organisation chooses the multi-sourcing strategy, it becomes critical that cultural compatibility between clients and service provider is considered. This is because putting together multiple relationships during a project becomes difficult. Vermeulen and Barkema (2001) state that existing cultural differences between subjects in a relationship can improve innovation, resource sharing and learning opportunities. Slangen (2006) and Bjorkman et al. (2007) noted that potentially positive, intense cultural differences must be controlled so that they will not affect co-ordination between organisations. In this study, organisational culture has an impact on the organisational factors. This means that if the cultures of the two parties are different, trust may be impacted; parties may or may not be willing to share knowledge, and this may impact communication. organisational culture has an influence on the enacted technology

Laws and regulations

Laws and regulations in the public sector may guide actions, but they can also limit actions

(Fountain, 2001). In this study, laws and regulations are written rules of order on how to conduct business. Contracts and SLAs also fall under laws and regulations as they give written orders on what will be required from each party. The contract defines the rights, liabilities and expectations of both the client and the service provider (Lee, 1996). An SLA is the fundamental part of an IT contract that defines the level of contracted service(s) laying out respective agreed-upon metrics expected by customers (Wong et al., 2021). It is crucial to include a well-defined SLA in an outsourcing contract (Isaías Scalabrin Bianchi, 2014). In the literature, there is a consensus among researchers that finding the right supplier and establishing workable agreements and SLAs are of paramount importance (Isaías Scalabrin Bianchi, 2014).

Duhamel et al., (2013) looked at the impact procurement laws and regulations have on IT outsourcing projects in the Mexican central government. The authors found that sometimes the laws and regulations delay the IT outsourcing process (Once a project is initiated, one year's authorisation is needed to start the bidding process.). Duhamel et al. (2013) also found evidence that regular IT outsourcing has an impact on institutional frameworks. This means managers in the public sector will be able to reformulate and rethink processes that will simplify regulations (Duhamel et al., 2013). This will make the outsourcing process simpler and will help public administrators to create better interfaces, which may result in better outcomes from the IT outsourcing relationship.

Qi and Chau (2015) explored the role a contract has in governing IT outsourcing success and showed that a well-designed contract and efficient contract management contributes to the ultimate success of IT outsourcing. Goo and Nam (2007) and Suzanne and Benoit (2015), in their empirical studies, also attest to the above findings. Burnes and Anastasiadis (2003) found that the public sector uses detailed and inflexible contracts that include formalised procedures for communication and define penalties for any breach of contract. This rigidity is due to the political process, existing laws and the administrative systems in the public sector. Poor contract management can have an undesirable impact on the public sector, possibly leading to fraud and corruption (Manyathi, 2019).

In the laws and regulation section, the researcher looked at Goo et al., (2010) study which identified eleven elements of an SLA used to outline the recommended structure of an SLA during IT outsourcing. The eleven elements are categorised by three characteristics and are supported by several other studies making this an ideal structure to use and compare it to real life SLAs (Goo et al., 2010). The researcher took two IT outsourcing SLAs from different

countries (developing and developed country) and compared their structures to Goo et al., (2010) proposed structure. One limitation to this comparison is the SLA from the developed country is comprehensive while the other is summarised. The researcher could not find SLAs that would be easily comparable, meaning, with countries that were economically different and had SLAs that were of the same magnitude.

IT outsourcing SLA structure

Goo et al., (2010) did not mention if the study was conducted in a public or a private organisation. However, the study was conducted in Korean domestic organisations. Therefore, the SLA structure is seen by the researcher as a generic structure for any sector. The following are the three characteristics (Foundation, Change, Governance) that have a total of eleven elements in them.

Foundation characteristics

The foundation characteristics of an SLA is to publicise the common beliefs shared by the two organisations so that their IT outsourcing relationship could build common goals and a general commitment toward the outsourcing relationship (Goo et al., 2010). Contractual elements under foundation characteristics include *service level objectives* (stating key principles and agreements between the parties), *process ownership plan* (identifying key process owners and their roles and responsibilities), and *service level contents* (specifying target service levels to be delivered, how often, to what extent, when and where) (Goo et al., 2010). The two SLAs from different countries have the foundational characteristics in their SLA. The naming convention were different, but the information was similar.

Change characteristics

Change characteristics attempt to develop the ground rules and procedures for dealing with future contingencies (Goo et al., 2010). Contractual elements under change management characteristics include *future demand management plan* (specifies the processes that will be used to manage the implementation of new or modified services), *anticipated change plan* (articulating that the right processes, people and tools are in place to enable change to meet ongoing demands), *innovation plan* (identifying the structure and process for introducing new innovations that is synchronised with enforcement plans), and. *feedback plan* (documenting the feedback processes and forming the road map for an efficient adjustment by identifying all affected areas and resources) (Goo et al., 2010).

A process was presented by the developing country's SLA depicting how work will be done as

well as how issues can be resolved. The process explains how support is handled, troubleshooting and also identifies people responsible for the action. Information on innovation plans and how feedback will be made was not presented in the SLA for the developing country. The SLA from the developed country has information on how tools that they are using will be expanded in the future and that speaks to innovation plan although for both SLAs the researcher could not find information on feedback plan.

Governance characteristics

Governance characteristics specify ways to maintain the relationships through a clear statement of the measurements, penalty and incentives, exit options and responsibilities, and documented communication processes as well as processes for identifying and resolving potential disputes. Contractual elements under governance characteristics include *communication plan* (documenting communication processes to facilitate consistent knowledge exchange), *measurement charter* (specifying tactical measures of service performance), *conflict arbitration plan* (stating the parameters and conduct rules for involving a third party for resolving issues), *enforcement plan* (states appropriate incentives and penalties based on performance) (Goo et al., 2010).

The developing country's process also falls under governance characteristics as it speaks about a process on how to resolve issues however, information on how penalties and incentives will be awarded for both the SLAs was not present. The developed country had information on how to measure the service provider's performance. However, the developing country did not show how performance will be measured. The communication plan from the developed country's SLA was comprehensive, the document had the type of communication medium that would be used. This kind of information is important because it speaks to how information will be shared during the project implementation. The developing county did not have the communication plan

Basically, the SLA for the developing country did not have some of the information presented by Goo et al., (2010) SLA structure on their document. There was a lot of missing information such as conditions under which termination of partnership may occur, information on how to measure whether the methodology used is successful, the organisation's reporting structure, a plan for technology upgrades was also not in the SLA the researcher could not find. This information is important to have in an SLA as it would help with successfully implementing IT outsourcing. The SLA from the developed country also had information about disaster recovery procedure which the researcher did not find on developing country's SLA. Although having a well-documented SLA is important but having lots of information can lose one concentration on

the most important things in the SLA. Donnell (2014) mentioned that including everything possible and having too much detail in an SLA need to be avoided as it may lead to failure of the SLA. At the end of the day, the parties in partnership need to understand and most importantly agree and commit to the things written in the SLA. Therefore, there need to be a balance between too much detail and missing detail.

3.4 Relationships among constructs

This section will discuss the relationships between the variables. This conceptual model has a total of 10 relationships between the variables, while Duhamel's model has a total of 16 relationships. Duhamel proposed 16 empirically testable propositions to exhibit the relationships between crucial constructs in IT outsourcing projects in the public sector. Six of the relationships were not clarified by the authors and email queries to their addresses were bounced back from the server. Of the six relationships, three deal with technologies (P8, P10 and P11) and three relate to feedback from the project outcomes, back into the organisation (P13, P15 and P16). To avoid 'yes' and 'no' answers during the interview, the researcher rephrased the propositions in a way that was going to allow the study participants to elaborate more on the relationships. The next paragraphs will be discussing the 10 relationships.

Mutual trust influences interface characteristics (P1)

Several authors agree that mutual trust comprise of a basic element in a socialised outlook on partnerships (Goo & Nam, 2007; Hlawu-Chihwenga, 2013; Moon et al., 2016; Swar, Moon, & Khan, 2012; Nguyen, Babar & Verner, 2006; Dyer & Chu, 2003; Cong et al., 2010). Having mutual trust empowers more open communication and better decision making, and it is the foundation of long-term partnerships that can develop over time. In this sense, interface characteristics (communication) between the service provider and the client should enhance high levels of mutual trust (Figure 3, label P1).

Interface characteristics influence shared knowledge (P2)

Organisations should maintain a flow of information, share past experiences, and suggestions to improve the quality of services. Shared knowledge that occurs in a partnership is important in the relationship as it increases confidence and dedication, resulting in successful projects with less errors (Duhamel, Gutiérrez-Martínez, Picazo-Vela & Luna-Reyes, 2012). As Duhamel et al. (2012) stated, prior studies have proposed that transferring, interpreting, and transforming knowledge properly among organisations grow their knowledge levels. In an ideal scenario, knowledge share in high levels between participants in the relationship will ensure they have sufficient information to grow effective outsourcing interfaces. Also, sharing knowledge can

motivate the team to set up communication mediums so that information can be shared clearly amongst the team (Figure 3, label P2).

Mutual trust influences shared knowledge (P3)

The evolvement of mutual trust, leading to shared knowledge, is an ongoing process. When organisations trust each other, then shared knowledge ensues (Hlawu-Chihwenga, 2013). The expertise of both parties influences their dependence on trust, which leads to shared knowledge (Park & Lee, 2014). In Qi and Chau's (2013) study, they categorised trust into interpersonal and interorganisational, and found that interpersonal trust plays a more dominant role in shared knowledge and making IT outsourcing a success. This implies that mutual trust is deeply intertwined with shared knowledge (Levin & Cross, 2004) (Figure 3, label P3).

Shared knowledge influences mutual trust (P4)

Park and Lee (2014) studied the role shared knowledge plays in trust, and its role in IT outsourcing success. They collected data from two big IT organisations and more than a hundred project teams and found that project complexity has an influence on shared knowledge. According to Maylor et al., (2008), more complex projects can have more disappointing outcomes, and more techniques are required to oversee the complex project. Furthermore, complex projects can encourage the members of the project teams to share knowledge with each other (Park & Lee, 2014). This, if successful, makes the implementation of outsourcing effortless. Shared knowledge between the organisations was also found to have an impact on initial trust and ongoing trust in different ways (Figure 3, label P4).

Institutional arrangements influence organisational factors (P5)

IT outsourcing service providers must have a solid understanding of the mental habits and cognitive models, as well as the symbols, obligations, history, and commitments of their clients (Duhamel et al., 2012). Furthermore, both parties must speak the same language; create and share boundary objects; and improve their accuracy, concreteness, and eventual transformability (Duhamel et al., 2012). Duhamel et al. (2012) assert that the client and the service provider must respect laws and legislative guidelines that constrain problem solving and decision making in IT outsourcing settings. (Park & Lee, 2014) study found that organisational culture motivates knowledge sharing. IT outsourcing relationships will result in positive outcomes and better communication if participating organisations have similar organisational cultures, allowing project participants to share their objectives, norms, and values (Chua et al., 2012). The label

‘P5’ in Duhamel’s model is pointing to mutual trust. However, while reviewing the literature, the researcher noticed that institutional arrangements also have a relationship with the rest of the organisational factors. This meant P6a and P6b was no longer needed as a relationship on its own. The institutional arrangements between both parties should enhance the organisational factors (Figure 3, label P5).

Objective technology impacts enacted technology (P7)

The enactment of certain technologies push for additional objective technology attributes and functions (Orlikowski, 2000). The demands from market or a new feature benefit are reasons a service provider would add new functionality to a current system. The impact of enacting technology and adding of new functionalities to a system may take a while to add and sometimes be very challenging to change. (Figure 3, label P7).

Enacted technology influences organisational factors (P8)

The sharing of knowledge, trust and communication between both the service provider and client play an important in the specific functionalities and services incorporated into a specific technology enactment, because they form representations, clarification, and the capacity of process co-creation (Levina & Vaast, 2005), particularly in public sector settings (Cordella & Iannacci, 2010). (Figure 3, label P8).

Enacted technology influences institutional arrangements (P10)

The implementation of new systems in the public sector, require the laws and regulations to be adjusted (Duhamel, Gutierrez-Martinez, et al., 2014). For example, in Mexico, advances in internet-based tax systems have prompted the development of institutional frameworks to better define the use of digital signatures and digital invoices (Duhamel, Gutierrez-Martinez, et al., 2014). Social structures, such as organisations, can limit or enable the implementation of technology; however, technology implementations need to adjust such structures (Orlikowski, 1992). (Figure 3, label 10).

Enacted technology influences outcomes (P9)

Once the technology has been implemented, project success must be measured based on the outcomes. The outcomes of IT outsourcing is success or failure. Outcomes associated with organisational performance vary and according to Agrawal et al. (2006); Goo et al., (2009) the common outcomes are; strategic enablement of business objectives; IT costs; service quality;

service responsiveness; scalability; and user satisfaction, to name a few. This study defines an outcome as the project's success or failure (Al-Shaaby & Almessabi, 2018). The meaning of project success is still somewhat unclear. Despite several studies having been undertaken, the concept of project success has not been well defined anywhere in project management literature (Al-Shaaby & Ahmed, 2018). In general, a project is judged to be a successful project if both project product and project management are a success (Al-Shaaby & Almessabi, 2018). Bodicha (2015) claimed that people say that a project is successful if, and only if, it is completed within the specified time and the given budget, meeting the requirements of the customer to a predefined standard. The implemented technology should influence the decision of whether the project is a success or not, by measuring the project's outcome. (Figure 3, label P9)

3.5 Contribution to the study

The South African public sector is undoubtedly facing various challenges in delivering services to its citizens (Martin, 2021). This is seen by the number of protests that take place, as well as reports in the media (Martin, 2021). This study will help in understanding the deeper issues concerning the lack of successful project implementation. Detailed data has come from the IT study participants who have experience working in the public sector. This means the data from this study will reflect their knowledge and enthusiasm, and will offer ways of making things work better for the public sector.

The Revenue Management System (RMS) project is a good case study for this research, because it is an eThekweni Municipality project, and this study is located in the same Municipality. The study participants' responses were anonymous, to give them the freedom to express their feelings without the possibility of judgement. This also allowed them to voice the deeper issues that the Municipality is facing in the context of IT outsourcing. The study participants' responses, and their analysis, will provide insight to higher management from the operational level to assist them in making informed decision in the coming years. Although this study is focusing on one Municipality, this is not to say the results will only benefit eThekweni Municipality. South Africa has a lot of government institutions that might be facing IT outsourcing challenges, like the city of Johannesburg (billing crisis). Finally, this study will lay the foundation for other researchers who want to do research on IT outsourcing in the South African public sector.

3.6 Conclusion

In summary, Chapter 3 focused on Duhamel's model. The chapter discussed what the variables mean for this study, as well as any departures from Duhamel's model. Based on the literature,

above, trust requires time to develop. Thus, knowledge sharing is an alternative means through which teams can win the trust of others. Some authors found that knowledge sharing is the major source of competitive advantage in a company. Interface capabilities may enhance shared knowledge and trust in a relationship. Teams are likely to value an interface that they perceive can help members to socialise, develop healthy relationships, and establish a strong knowledge network where it is possible to freely share knowledge with others. It also seems that similarity in cultures motivates knowledge sharing.

The use of detailed and inflexible contracts in the public sector was found to have an influence on the efficient implementation of outsourcing. Moreover, a well-designed contract, along with efficient contract management, contributes to the ultimate success of IT outsourcing. The chapter also looked at how success is measured once a project has been brought to completion. Based on the literature, the researcher has found gaps with regards to practices the South African municipalities use when outsourcing their IT. The following chapter will look at the research methodology; the research site; the population; the techniques used to gather data; how the data will be analysed; and how to make sure the data from the study participants is credible.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

This section will discuss the research design that was chosen for this study, as well as the reasons for choosing this design compared to others. There will also be a discussion about where the study takes place and why this site was best suited for the study, as well as the type of study participants and the criteria used for the potential list. This section will also look at the process of developing the interview questions and a discussion of each section in the questionnaire. Sections 4.6 and 4.7 will look at the method used to collect data from the study participants and the process of transcribing the data to the analysis tool used. This will be followed by the method used to confirm if the researcher's interpretations of the responses are accurate. Section 4.11 will look at how the research instrument was administered to the study participants. The last section will look at the trustworthiness of the findings.

4.2 Research approach

Research problems are examined through quantitative or qualitative methods. According to Bluhm et al. (2011), quantitative research is appropriate when the goal is to make generalisations, establish commonality, or for measurement. On the other hand, qualitative methods are used to gain a extensive understanding of the perceptions of people regarding a phenomenon (Merriam, 2009). This study will be using a qualitative design because its focus is on a single concept (one idea), bringing personal values into the study (Creswell & Creswell, 2017).

4.3 Research design

Case study research allows the exploration and understanding of complex issues and can be considered a robust research method, particularly when a holistic, in-depth investigation is required. There are two types of case studies: single-case studies and multiple-case studies. This study will adopt a single-case study design. This approach is used in cases where there are no other cases available for replication. However, the drawback of a single-case design is its inability to provide a generalising conclusion, particularly when the events are rare (Peattie, 2001). Rajaeian et al. (2016) used a single-case study in their paper on IT outsourcing decisions because it entailed the inclusion of contextual information about the studied organisation. The author stated that a multiple-case study has a high chance of losing valuable information through summarising (Rajaeian et al., 2016). To an extent this can happen, especially when the same logic used for a single case is used in a multiple case; there is a possibility of losing valuable information as the latter case study would require extensive resources and time (Rajaeian et al.,

2016).

There are three categories of case studies: descriptive case studies, exploratory case studies, and explanatory case studies. Descriptive case studies aim to analyse the sequence of interpersonal events after a certain amount of time has passed (Zainal, 2007). Studies in business research belonging to this category usually describe cultures or sub-cultures, and they attempt to discover the key phenomena (Englander, 2012). Explanatory case studies aim to answer 'how' or 'why' questions with little control by the researcher over the occurrence of events (Zainal, 2007). This type of case study focuses on phenomena within the context of real-life situations (Englander, 2012). Exploratory case studies aim to explore any phenomenon in the data which serves as a point of interest to the researcher (Zainal, 2007). This study is an exploratory study as it is looking at investigate IT outsourcing in the public sector.

Khalfan and Gough (2002) used a qualitative approach when looking at a single phenomenon of IT outsourcing practices in a developing country. Their study is similar to this study, which is also investigating the same phenomenon in a developing country (South Africa). McGowan (2018) also chose this approach because the author wanted to provide insights into additional aspects of knowledge transfer during IT outsourcing transition phases. Moreover, the results were to be used by IT leaders and project teams to plan for successful knowledge transfer during the transition phases of ITO projects. This rationale correlates with the reasons for this study as well as the approach chosen. In an exploratory single-case study, the researcher uses interviews, questionnaires and experiments to collect data (Creswell, 2013). This study also uses the exploratory single-case study approach by using interviews as an instrument to explore the practices of eThekweni Municipality when outsourcing their IT.

4.4 Research site

The reason for the selected site is because eThekweni is the largest city in the province of KwaZulu Natal. Ethekeweni is also the third-largest city in the country, with its land area comparatively larger than that of other South African cities (Main, 2017). The study took place at the eThekweni Metropolitan Municipality's offices. These offices are situated in the central business district of eThekweni. EThekweni has the second largest population in the country of 3,176,254 (United Nations, 2020). During both the 2019 and 2020 State of the Nation Addresses (SONA), the president of SA emphasised SA's smart city vision, which is presented as the solution to challenges for urbanising South Africa. eThekweni is one of two cities in South Africa that has introduced this vision through open data platforms (ODPs) (Wilson & Guya, 2020). The platform, a foundation of smart city development, is a repository of data gathered from local municipal departmental databases and economic forecasting platforms for the dissemination of economic

intelligence and insights, to enable informed decision-making (Wilson & Guya, 2020).

The eThekweni Municipality was also chosen because of how well it is run. This is evident from the several awards the city has won: These include the Municipality of the Year title in 2015 and the Vuna award for best run metro in two consecutive years (2005, 2006) (Mthethwa, 2015). In 2019 the Municipality also won the overall Innovator of the Year award for its innovative WhatsApp which enables the Municipality to receive and respond to enquiries from residents timeously (Gabara, 2019). The researcher site was also convenient for the researcher because the researcher is a former employee of eThekweni Municipality.

4.5 Target population

The population for this study is the IT outsourcing project teams working for the Information Management Unit (IMU). The IMU consists of seven departments (Figure 4): The Project Management Office; Enterprise Architecture; Applications; Customer Services; GIS; Telecoms, Networks and Electronics Services; and Systems Delivery and Security.

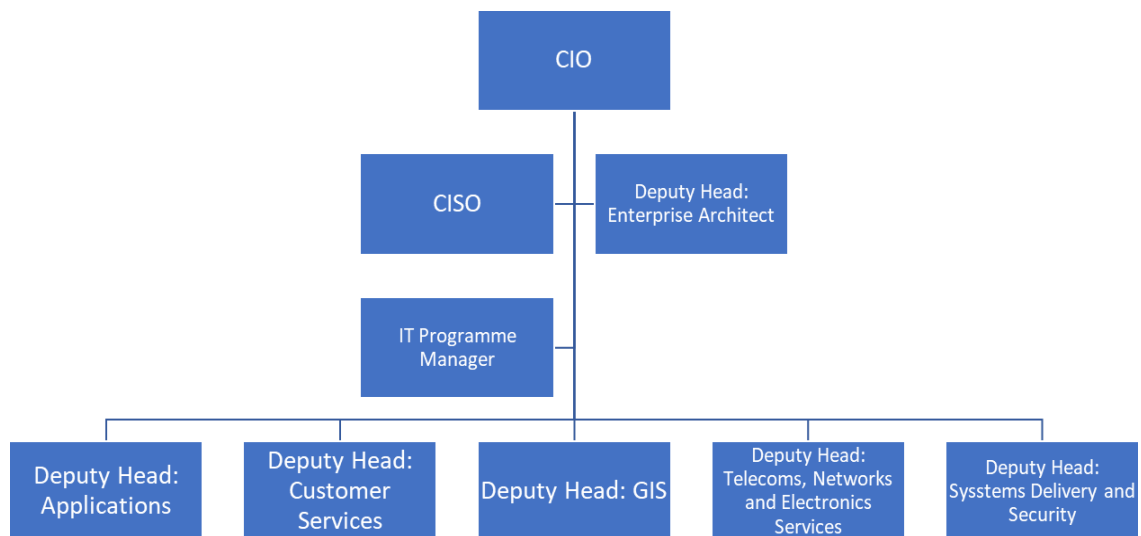


Figure 4: Brief IMU Organogram. This figure was sent by Mrs L. Bophela, ([eThekweni Metropolitan Municipality] 2021, pers. Comm., 6 June).

The study participants include a deputy head; a programme manager; application analysts; senior managers; and other IT outsourcing knowledge workers who had planned or participated in IT outsourcing projects. A total 10 team members from various departments participated in the study (Figure 5). The reason for choosing the unit is because it is responsible for most of the IT outsourcing projects that happen at the Municipality (Bophela, personal communication, 6 June

2021).

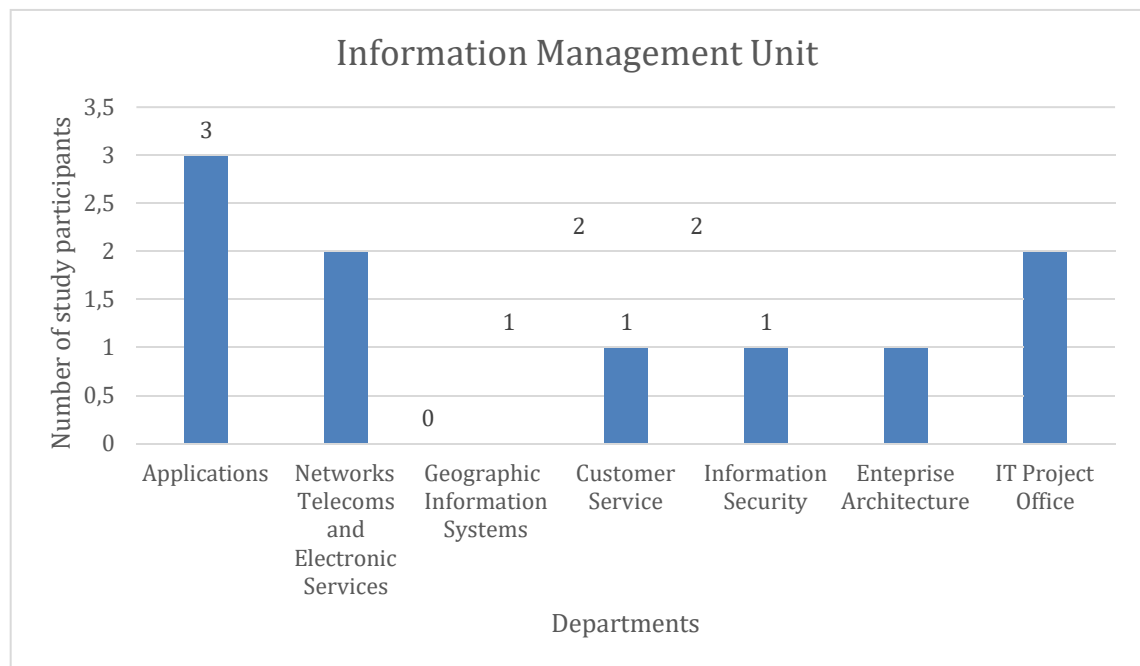


Figure 5: Study Population

4.6 Sampling and sampling technique

This section will discuss the sampling technique and method used for choosing the study participants.

Sampling

The selection of the representative population subset is a technique called sampling. This technique has two types: probability sampling and non-probability sampling (Taherdoost, 2016). In probability sample, each element of the population has a known non-zero probability of selection (Taherdoost, 2016). Unlike probability sampling, non-probability sampling techniques use non-randomised methods to draw the sample. Instead of randomisation, participants are selected because they are easy to access.

Sampling Technique

Snowball sampling was used to obtain the data for this research. This is a non-probability method of sampling. This technique begins by identifying a couple of participants that match the criteria for consideration in the investigation, and afterwards requesting that they recommend others who also meet the determined criteria (Elliott & Valliant, 2017). These are preferably people who have been involved in the outsourcing process from preparation phase up until relationship management phase (Cullen et al., 2006). It is important to identify key informants who know the

most about a particular topic in the organisation and have decision-making authority in the areas of interest (Cong et al., 2010).

The potential list of participants was chosen based on the following requirements:

- A participant must work within the Information Management Unit.
- A participant must be able to make inputs and judgements during IT outsourcing.
Example: A systems analyst should also have decision-making capacity.
- A participant must have worked on an IT outsourcing project at eThekweni Municipality. In this study 20 potential study participants were approached, and the final sample consisted of 10 study participants. This will be discussed in greater detail in Section 4.8.

4.7 Data production methods

The data production method used for this qualitative exploratory case study is online interviews. The interviews were conducted on the Zoom platform. The study participants' email addresses were obtained from the senior manager who was initially contacted. A consent form was sent to participants before the interview, to be signed and returned to the researcher before the day of the interview. When this did not happen, during the interview, the researcher asked the participants for consent to conduct and record the interview. Data production started in December 2020 and ended in March 2021. The average length of the interviews was 45 minutes. The online interviews allowed the author to explore the study participants' experience in, and attitudes to, IT outsourcing.

4.8 Online interviews

Before starting each of the individual online interview sessions, each participant was given the definition of outsourcing and how it is similar to contracting. Participants were then asked to consent to having the interviews audio-recorded to aid the researcher in the interview process. The use of audio recording allowed the researcher to focus on the interview and allowed the participants to talk freely without interruption. The audio-recorded interviews were later transcribed for analysis purposes. Member checking, which involves soliciting feedback on the findings from study participants, was used as a way to increase credibility (Bowen, 2005) and to confirm the accuracy of the researcher's interpretations, meaning that the transcribed interview was then sent to the participant for confirmation of accuracy of the transcript. Another type of member checking that was also utilised for this research was described by Sandelowski (2008), as happening after some data analysis has taken place, when the researcher shares the findings of the analysis with the participants to see if the findings are aligned with the participants' perceptions.

4.9 Process of developing the interview questions

An alignment matrix is a tool that is used to assist in aligning the research questions with variables and interview questions (located in Appendix 2: Matrix). This study consisted of five research questions. Each research question is located in the first column of the alignment matrix. Drawn from the research questions are variables, located in the second column. The variables are: IMU, Employees, IT outsourcing and IT outsourcing process. The metrics used for the variables are listed in the third column and research questions are grouped in the last column. The detailed questions are articulated in the interview schedule, Appendix 3: Interview Questions.

4.10 Description of the interview questions

The interview questions consist of two sections. The first section included basic questions about the participant, as well as general questions on IT outsourcing. The aim of this section was to collect biographical information of the participants as well as to gain a sense of the participant's knowledge of IT outsourcing. The second section is very detailed and focused on the conceptual framework. There is a total of 22 questions in the interview questionnaire.

Section 1 consists of nine questions (1.1 – 1.9). In Questions 1.1 to 1.5 the researcher was confirming that the study participant was, indeed, working at the Information Management Unit; in which department; and their position in, and time at, the department. In Questions 1.6 to 1.9 the study participants explained their understanding of IT outsourcing. The aim of these questions was for the study participant and the researcher to reach a mutual understanding of the term. The researcher also made the study participants aware that IT outsourcing and contracting are terms used interchangeably for this study. The study participant was given a list of the types of outsourcing that are available and was asked to choose from the list; but they were not limited to the list. The aim of the question was to use the type of outsourcing chosen by the study participant when analysing the responses to the questions in the second section. Additionally, the study participants had to say if the chosen type of outsourcing was delivering the expected outcomes. Outcomes are objectives stated in the beginning of the project. The last question of Section 1 aimed to find out if having a good relationship with the service provider resulted in a successful project. Upon asking the study participants this question, the researcher realised that the definition of 'good relationship' is relative to an individual. The researcher did not define 'good relationship' for this question and wanted the study participants to answer this question based on their understanding of the term.

Section 2 consisted of twelve questions and a bonus question (2.1 – 2.13). This section's questions focused on the variables from Duhamel's model and the relationships between these variables.

The researcher wanted to understand if one variable influences the other variable/s to occur. For example, one of the questions the researcher asked was whether, if a client is sharing knowledge with the service provider and vice versa, this influences trust in the relationship. All of the relationships between the variables were taken from the conceptual framework for this study. In the bonus question, the researcher wanted to find out if there were other variables that were not looked at in this study that the study participants, based on their experience, felt were very important to the success of an outsourced project.

4.11 Pilot testing of research instruments

The purpose of pilot testing the research instrument is to obtain feedback from a sample. This exercise assisted the researcher to identify and correct any misunderstanding of the questions.

The researcher tested the questions on an individual from a different public entity located in Johannesburg. The individual had been involved in many outsourcing projects and was a project manager. The pilot interview and the actual study interview used the same interview schedule. (Refer to Appendix 3: Interview Questions). The questionnaire was distributed to the individual a day before the interview. At the end of the interview, the individual was given the opportunity to express their views on the interview questions. The individual did not see any errors with the interview schedule, giving the researcher the go-ahead to use the instrument on the selected study participants.

4.12 Administration of the research instruments

An email was sent to the senior manager of the Applications Department. The content of the email was informing the manager of the intention of the research, as well as requesting them to refer the researcher to potential people. The manager replied with 20 potential participants for the interviews. Interviews were then set up with the potential study participants. The researcher received three responses from the first email to all the potential study participants. A new strategy was devised by the researcher to rather send personalised emails to each participant. The result from this strategy increased the number of responses received to 10. Seven responses out of the 10 received accepted the invitation and three declined. The other potential study participants did not reply to the emails. Referrals from the successfully interviewed people were unsuccessful as the people who were being referred were the potential study participants the researcher had already invited to interviews. A diagram showing the number of people interviewed from each department is shown in Figure 5.

The online interviews were personally administered by the researcher to ensure a rapport was

built during each interview. There were three people from the Applications Department; two participants from Networks, Telecoms and Electronic Services; one participant from Customer Service; two from the IT Projects Office; one from Enterprise Architecture and one from Information Security, with none from Geographic Information Systems. (See Figure 5)

4.13 Data analysis

According to Saldana (2013), qualitative data analysis begins by focusing on the research questions, because the research questions will determine what coding method will yield valid answers. The qualitative analytic process called coding involves comparing data at every level through a cyclical process, utilising first and second cycle coding methods (Saldana, 2013). First cycle coding is the initial process of reading through the data to extract temporary categories, and second cycle coding is the process of analysing the data to extract themes (Saldana, 2013).

As suggested by Kawulich (2005), analysis in this study began the moment data production commenced and consisted of looking for the underlying codes or concepts from each data source during the online interviews. The online interviews were analysed using NVivo Pro 12 research software, which is a qualitative software product that helps when searching and sorting through large and varied forms of research data (QSRInternational, 2016).

Interview Analysis

Interviews were recorded for audio content, transcribed by the author into Microsoft Word and copied to NVivo Pro 12 to aid in the interview analysis. There is one interview that the researcher was not able to record because of technical difficulties. This interview was transcribed into Microsoft Word during the interview. Interview analysis in NVivo involved reading each interview transcript to find codes that related to the research questions, and to group the data into common and uncommon segments for comparisons and for further analysis across the data. The author then created sub-codes to further analyse the nodes. (Refer to Appendix 5: NVivo Code Report Letter for full list of nodes used) Structural coding was the coding method used during the interview analysis. Structural coding consists of reading the interviews and assigning passages to new or existing nodes, or folders, within the analysis tool, NVivo software (Guest and McLellan, 2003).

4.14 Issue of trustworthiness

Quantitative research is concerned with measurements and quantifiable outcomes, while qualitative research is concerned with gaining an understanding of a social phenomenon (Given, 2008). Quantitative research methods gauge quality, or the assurance that the research findings are accurate, using quantitative terms such as internal validity, external validity, reliability, and

objectivity. Qualitative research methods use qualitative terms to define quality by the degree to which the findings are trustworthy (Given, 2008). Bowen (2005) suggested that many aspects of trustworthiness can be addressed using thick descriptions and examples from the data to support the research findings. According to Bowen (2005), trustworthiness in qualitative research involves credibility, transferability, dependability, and confirmability, which are discussed below.

Credibility

Credibility ensures that the study measures what is intended and that it is a true reflection of the social reality of the participants (Bowen, 2005). Bloomberg and Volpe (2012) contended that credibility in qualitative research is equivalent to the standard of validity in quantitative research. There are many strategies to address credibility, including 'prolonged engagement' and member checks. The credibility of this study was established through the member-checking technique, by offering the participants an opportunity to review, validate and make changes to the transcripts of their interviews prior to data analysis (Bloomberg & Volpe, 2012; Lincoln & Guba, 1985; Moustakas, 1994; Patton, 2002).

Transferability

Transferability relates to the ability of the results to be transferred to other contexts (Bowen, 2005). Because qualitative research is specific to a particular context, it is paramount that a 'thick description' of the context of the research is provided, because a qualitative study is specific to a context (Bowen, 2005). This will allow the reader to evaluate whether research is transferable to their situation or not (Bowen, 2005). To provide for transferability, this study presented results with 'thick' descriptions of the phenomena. Any feelings presented by the study participants during the interview were noted. Responses from the study participants were transcribed by the researcher in a way that will be readable to the audience. Additionally, Houghton et al. (2013) stipulate that the research report must supply enough rich description and transparency of the research processes so that the process can be duplicated in a similar context.

Dependability

Dependability make certain the process is described in adequate detail to enable another researcher replicating the work (Bowen, 2005). This requires a comprehensive investigation. Strategies such as maintaining consistency in the use of procedures for data recording, management and analysis, and establishing a chain of evidence, supported the dependability of data collection activities and procedures in this study.

4.15 Ethical consideration

Consent for this study was obtained from the Municipal Institute of Learning (MILE) at eThekweni Municipality. The MILE is the first local government-driven, practitioner-based Institute of Learning and was initiated by eThekweni Municipality in the summer of 2009 (MILE, 2011). The institute was interested in the study and requested that I send them the proposal. Along with the proposal, Mr Collin Pillay (Head of eThekweni Municipality Academy) also requested a letter from my supervisor committing to being part of my research study.

The research proposal was completed and submitted to the Humanities and Social Science Research Ethics Committee (HSSREC), along with the gatekeepers' letter, for approval on 27 October 2020. Full approval was received from the committee on 20 November 2020 to conduct the study. The letter is attached in Appendix 4: Ethical Clearance Letter.

4.16 Conclusion

This is a qualitative research study, that used an exploratory single-case study as a way of exploring what practices eThekweni Municipality uses when outsourcing their IT. The interviews were personally administered online via Zoom. The researcher made use of the NVivo tool to analyse the data. In order to ensure credibility of the study after transcribing and after analysis, the researcher used the member checking technique. The rights of the study participants were protected the signed informed consent form that guaranteed the anonymity protection. Ethical clearance was given to this study after the proposal was reviewed. Chapter 5 will discuss the results of the qualitative exploratory single-case study designed to uncover the impact critical success factors have on IT outsourcing processes in eThekweni Municipality.

CHAPTER 5: QUALITATIVE RESULTS

5.1 Introduction

This chapter will present the data obtained from the interviews as well as the results from the analysed data. NVivo 12 Pro was used to analyse the data. The results will be categorised in themes and subthemes based on the conceptual framework variables: organisational factors, institutional arrangements, objective technology, enacted technology and outcome. The discussion will be arranged in two sections according to the interview structure. Part 1 results (5.2), as mentioned in the research methodology chapter (Section 4.10), will focus on the type of outsourcing the IMU unit uses and whether this type of outsourcing is delivering the expected outcomes. This will also gauge their understanding of outsourcing and whether having a good relationship between the service provider and the client results in a successful project. Part 2 results (5.3), as mentioned in the research methodology chapter (Section 4.10) will consider questions based on the conceptual model.

5.2 Part 1 results: IT outsourcing and its outcomes

This section will consist of Section 5.2.1, 5.2.2 and 5.2.3, the type of IT outsourcing used by IMU and whether having a good relationship results in a successful project.

5.2.1 Understanding of IT outsourcing

The study participants all had a mutual understanding of the term IT outsourcing. This made continuing with the rest of the questions easier and it fulfilled the researcher's requirements as stipulated in Section 4.6. Quotes from the study participants providing their explanation to the term IT outsourcing show they understand: "It is when we acquire skills that we don't have in the Municipality or we acquire skills that we think if we outsource them based on the budget, we can get value for money at a cheaper cost. We look at the cost, the benefits and whether are we going to achieve our goals as Municipality, our strategic objectives as an IT Department" (Senior manager 1). "It simple means we are looking for ability/capacity of what needs to be done outside the organisation" (Senior manager 2). "To outsource parts of IT service that you provide to business, because it is too expensive for IT Department to provide internally, or services are not available and therefore it will take a long time for Municipality to have resources to do the service therefore requiring them to outsource that service for a limited time" (Supervisor). "IT outsourcing is acquiring another company to come and do work that we as an organisation do not have skills for" (Project manager)

5.2.2 Type of IT outsourcing used at IMU

The study participants were asked what type of IT outsourcing they use for projects. From the answers received, it is clear the Municipality uses multiple types of outsourcing. The participants mention the type of outsourcing chosen for a project depends on the type of project they are outsourcing. “The different department in IMU perform different functions that require different skills, therefore, the type of outsourcing chosen depends on the service that we want to deliver” (**Senior manager 1**). Four participants said they use single sourcing for the IT projects and three of the four participants are from the same department (Applications). A quote from one of the four study participants was “Using one service provider to provide the work is easier because we can always go back to the drawing board if we as the client are not happy and satisfied with the work the service provider is producing” (**Application analyst 3**).

However, one participant out of the four said that their department uses both single sourcing and multi-sourcing. The study participant quoted, “When I first came into the department, there was a project I was allocated to and it was utilising one service provider to provide IT services at the data warehouse, but now the department is slowly getting into multi-sourcing as now we have more than one service provider” (**Application analyst 2**). The shift was caused by the change in scope and requirements of the project (**Application analyst 2**). Another study participant that supports the use of multi-sourcing said, “multi-sourcing feeds our environment very well because in my department we have different services that cannot be provided by one service provider” (**Senior manager 1**).

Five participants from different departments (Applications, Architecture, Project office and Customer Service) said they use co-sourcing for their IT projects. Co-sourcing allows the service provider and the client to work closely together to develop a system. Some departments in the Municipality have shifted to co-sourcing because they want the internal resources to be able to carry on with the work when the service provider’s contract has come to an end. Here are a few quotes from the study participants on co-sourcing “We normally co-source our projects, get a service provider to work with us during project development” (**IT project manager**). “Co-sourcing works well in our department, example: we had a project where the Network team and users (Call Centre agents) were working well with the service provider that was procured” (**Senior manager 1**). “Our department has shifted toward co-sourcing a year or 2 ago as our organisation want internal resources to work closely with the service provider to make maintenance of system and handover easier for our department” (**Application analyst 1**).

5.2.3 A successful project is influenced by having a good relationship

In this section we look at whether having a good relationship with the service provider results in a successful project implementation. Nine participants agreed to this question. Here are quotes from a few of the study participants that agree that having a good relationship will influence a successful project. “Having a good relationship with the service provider means the projects you are involved in with them will run smoothly” (**Application analyst 2**). “Having a good relationship with the service provider is important to the success of the project” (**IT project manager**). Other participants went further by saying a good relationship is governed by good contract management. “As long there is good contract management” (**Supervisor**). “When the contract is managed very well, the service provider will deliver because good contract management will lead to a successful project” (**Deputy head**). Another participant added that on top of having a good contract, “having a well put together project specification is also important to the relationship and the success of a project” (**Program manager**).

The 10th study participant said yes and no to the question. **Application analyst 1** said, “yes, in a sense that you can have access to them promptly because you have a good relationship with them and ‘no’, because when the service provider is failing regardless of a good relationship, they can just not deliver what is expected. The researcher did not prompt the participant for an example of when the relationship between the client and the service provider is good, yet the goal of the project is not met.

5.3 Part 2 results: extent of Duhamel, Gutierrez-Martinez, et al. (2014) model relevance

This section will focus on the results of the questions related to the conceptual framework.

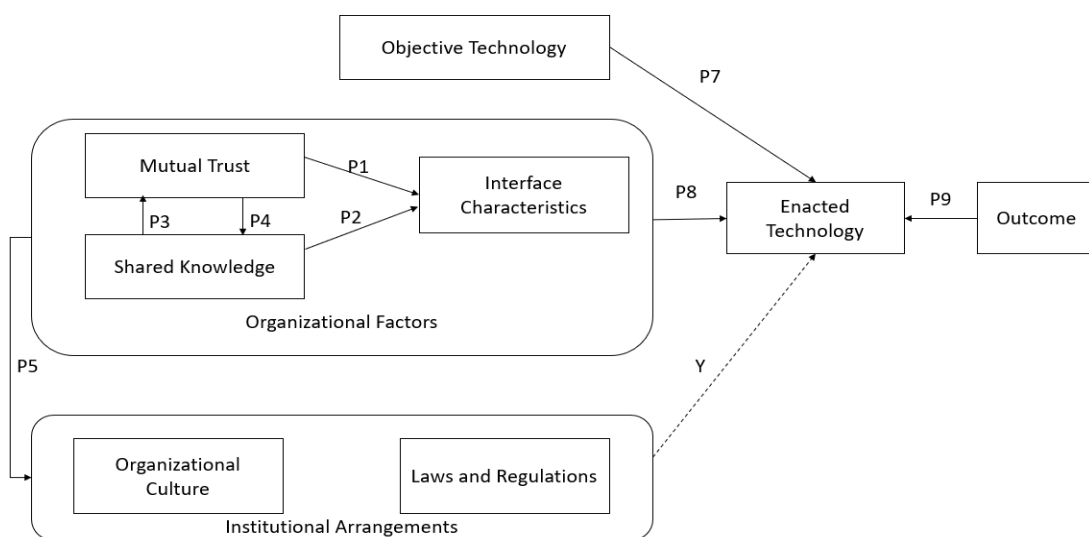


Figure 6. Modified Outsourcing Technology Enactment Model (Copy of Figure 3)

5.3.1 Communication is influenced by trust (P1)

In this section the researcher wanted to find out if communication is influenced by trust; this question is illustrated by P1 in the conceptual diagram. Nine participants said yes to trust being an influence on how the service provider and client communicate with each other. The study participants found it easier to communicate with the service provider when they trusted each other as trust for the client meant the contract and SLA is being adhered to by both the parties. The contracts and SLA were found to play a very critical role during outsourcing. This is the client's "go-to" document when they want to properly manage the service provider as it specifies what is needed from them as well as the communication strategy. Here are a few quotes from the study participants that agreed that communication is influenced by trust. "Trust can influence communication to a larger extent because if there is mutual trust between the two organisations, we can easily communicate with each because we will not be doubting one another" (**IT project manager**). "Trust does play a role when communicating in a project" (**Application analyst 3**). A senior manager, who sometimes acts as a project manager, agreed saying: "When we appoint a service provider, we make sure that all boxes are ticked in terms of what we are looking for so that the quality of communication will be adequate between a service provider and a client" (**Senior manager 1**). Another project manager also said a contract acts as a form of trust between the service provider and the client and this trust will influence the way the two parties communicate (**Project manager**). A deputy head emphasised "we use contracts to manage the service provider" (**Deputy head**).

As a client you need to trust the service provider you have appointed because you need to provide them with sensitive company information they require to provide the service (**Supervisor**). An example was given by the **Supervisor** that, if you have IT Security Anti-virus outsourced, there are certain access to servers that you need to give the service provider that will be doing the anti-virus for you, there's certain information that they will gain access to, but there's a high level of trust that is required from them to be given access to that information.

5.3.2 Communication is influence by shared knowledge (P2)

All the study participants agree that sharing knowledge in a project influences team member communication. During a project it is important for both the parties involved to have a shared understanding of what the project entails, where the project is in terms of progress and whether there are any risks or things that might impede the completion of a project. This type of information can be determined through communication. Here are a couple of quotes from the study participants that agree to this. "The department is now involving the internal resources because the service provider is expected to share knowledge with them" (**Application analyst**

1). For example: if we deployed their system and there's an issue that comes up, it would be nice of them to share and show us how to resolve the issue in the future should it occur again (**Application analyst 1**). Furthermore, "during the requirements gathering and development phase, as the client, we expect them to share knowledge that might hinder the progress of the system" (**Application analyst 2**). "Sharing knowledge with one another during a project assist the team with understanding each other, this means the team will be able to communicate the same language about the project" (**IT project manager; Security specialist**).

It is difficult to maintain a system, or support the team, if you were not part of the work in the beginning of the project and it is even worse if you have no skills related to the kind of work you are expected to do. The internal staff that need to maintain the system should go on training related to the system and the client needs to share knowledge on actions to be taken if something goes wrong with the system. Here are quotes from the study participants that has led to this conclusion. "It does play a role because it is very difficult to be asked to support something which you were not involved on its development stage, so if they share knowledge, it would be much easy" (**Application analyst 3**). Furthermore, "If the client does not have internal staff that specialise in the work being outsourced, training need to take place, and this means knowledge is shared by the client while at the same time work is carrying on" (**Supervisor**). "By doing so we are trying to ensure that people share information, and it really influences the quality of communication that leads to a successful project including skills transfer" (**Senior manager 1**).

5.3.3 Shared knowledge is influenced by trust (P3 and P4)

This section will look at the results that were given by the study participants on how trust and knowledge can influence each other during a project. From the results, trust and shared knowledge are two of the highest factors referenced when compared to other themes and sub-themes. The study participants referenced trust 28 times and shared knowledge 24 times in the interviews.

One participant, "said a company does not select a service provider they do not trust" (**Application analyst 1**). The selection of the service provider happens during the evaluation phase of the project. The Security specialist said trust is influenced by past experience with a client. The security specialist quoted, "Trust between both parties can either be influenced by past experience that was successful or if the client has never worked with the service provider before, but the research conducted prior engagement on the service provider is reputable (**Security specialist**).

“When you share knowledge, it means you trust the people you are working with, to a larger extent” (**Senior manager2**). Application analysts 1 and 2 and the Senior manager agreed with this and further elaborated. “If the service provider shares their codes with us, without a doubt they trust us at a department” (**Application analyst 1**). “When the service provider and client are sharing information about the project with each other it means we have that trust bond, for example when I started as a trainee, I was doing few reports compared as in now I have access on everything because they trust me with the information and my work” (**Application analyst 2**). When poor quality information is shared during a project it may impact trust in a negative way. The Senior manager agreed: “Although shared knowledge influences trust, one has to make sure that the information shared is accurate, because someone can share knowledge which can negatively affect the trust that is already there” (**Senior manager**).

However, other study participants said sharing knowledge with each other does not mean there is mutual trust (**Application analyst 3; Supervisor; IT project manager**). A participant went further to say “the service provider did not include us (internal staff) during the project, they developed the system on their own and when they were doing handover it was brief and it all seemed as if trust did not exist at all (**Application analyst 3**). This is because sometimes the service provider does not want the client to have all the information: for example, the client can tell the service provider that the server has timed out and the service provider would not tell the client how this issue should be fixed instead they want to fix the issue themselves (**Application analyst 3**). Based on the researcher’s analysis of the study participants quotes, it appears the service provider will not share all of the information on the project because they want to extend the contract from implementation to maintenance. This type of behavior from the service provider can, over time, erode the trust that might have already been built during the implementation of the project if the client feels the service provider is “milking” money from them. The **IT project manager** added that sometimes it is not about trust but about getting the work done and completing the project. The **IT Project manager** quoted, “sharing knowledge with each other can also be because the team want to make the project a success and not because there is mutual trust”.

5.3.4 Implementation of technology is influenced by organisational factors (P8)

This section will look at whether organisational factors (communication, mutual trust and shared knowledge) influence technology implementation based on the results from the study participants. Section 5.3.4.1 to 5.3.4.3 will discuss each of the organisational factors and Section 5.3.4.4 will look at which factor is the most influential during the implementation of technology based on the results from study participants.

5.3.4.1 Communication

The 10 study participants agree that communication plays a big role in the successful implementation of a project. The **Application analyst 3** said, “communication plays a huge role because if there’s no good communication in the team, there will be no mutual understanding about the project within the team and that may lead to less progress in technology development”.

Four participants went further and specified that the type of technology used to communicate can make a project successful. “We rely more on technologies like using Zoom and Teams for our meetings unlike face-to-face meet ups” (**IT project manager**). From the analysis of the quote, this may be due to the COVID-19 pandemic restricting in-person meetings. Most organisations have made their employees work from home to avoid being in contact with each other and spreading the virus even further. “Email is another technology used by the service provider for instant communication during work hours” (**Supervisor**). Emails have always been a form of electronic communication that has been used for years by organisations when the employees communicate with each other. “The technologies we use are very important to get updates or things we need to do as a team and if we are failing in the ways of communication, we might not meet the needs of the client because we might have missed communication during a project” (**IT project manager**). “The flow of communication lead to a friendly work environment which means everyone will be on the same page in terms of project progress” (**Program manager**).

The **Supervisor** mentioned that it is important to have a communication strategy in the beginning of a project to mitigate an instance where there are delays when responding to each other. The study participant quoted, “If we work with some service providers, they have expectation of that when they send you an email you will see it and instantly respond even after work hours” (**Supervisor**). “Although flow of information is encouraged constantly but communication should not be made after hours because that is not the client’s culture” (**Supervisor**). This speaks to respecting each other’s time in a team and also the culture of the organisation. Two participants said communicating with people outside of the team is very important when an organisation is to implement new technology as this aid’s adoption of the new technology (**Supervisor; Senior manager 2**). The **Supervisor** mentioned “Communication assist mostly in the process of adoption because if it is not properly communicated it will not be properly received which will affect the use/implementation at the end. Because we can deploy as much technology as we want in the environment but if people don’t use it, then it’s just waste of time”

5.3.4.2 Shared knowledge

All the 10 study participants agree that shared knowledge is influential during the implementation of the project. Shared knowledge needs to happen with everyone who will be engaging with the system as well as among the team members (skills transfer) that are developing the system (**Senior manager 1; Deputy head; Application analyst 3; Application analyst 2**). Once a project has been implemented it is important to share as much information with the users about the product as possible because people do not want to use something that they don't understand (**Senior manager 1**). The senior manager further gave an example about their recent project role out, Microsoft Teams. Rolling out Microsoft teams would be a waste of money if the intended users do not understand its use, therefore, shared knowledge needs to work together with technology adoption if the project implementation is to be a success (**Senior manager 1**).

"Sharing information with the team helps them to be efficient and deliver what is required and they will understand better because they won't be limited to needed information" added the **Program manager**. "Keeping important information away from me while we are in the same project it will hamper the progress of the project" (**Security specialist**).

"Some people within the department have experience and they guide & groom other employees so that the project will be successful" (**Application analyst 2**). Shared knowledge plays the role of skill transfer, because when you share knowledge, you help to develop another member of the team (**Application analyst 3**).

5.3.4.3 Mutual trust

Mutual trust does play a role in influencing the implementation of the project to a larger extent (**Application analyst 1; Application analyst 2; Application analyst 3; Senior manager 2; IT project manager; Security specialist**). "A service provider is selected based on their ability to deliver; this means the client trust that the service provider will get the job done" (**Application analyst 1**). Nevertheless, the Security specialist said trust is based on previous experience with the service provider, "We tend to trust each other based on experiences" (**Security specialist**).

"In the IT department trust is very important because there is co-dependency and the team has strong reliance on each other, this means the team can either succeed or fail once everyone is done with their part it needs to be integrated to the bigger project" (**Application analyst 1**). Therefore, it is in their best interest to try and make it work well. "When team members trust each other there is a smooth implementation of the project" (**Application analyst 3**). The **Program manager** added, trust will enhance the relationship, team spirit as well as confidence in a team. The Supervisor's team has the role of being a service provider to other units within the Municipality:

“if business units do not trust you; you can roll out Microsoft Teams and business will be purchasing Zoom on the side, therefore, mutual trust influences project implementation (**Supervisor**).

The Senior manager 1 and Deputy head said trust is not an important factor during a project implementation. They said they rely more on SLAs for work to be done, e.g. The **Senior manager 1** said “Mutual trust is not one of those big factors, sometimes it depends on project specification. We rely on Service Agreement which dictates what has to be done by who, with professionalism.” The **Deputy head** said, “based on past experiences trust does not play a role during the implementation of the project and rather relies on the contract”.

5.3.4.4 The organisational factor that is most influential during a project

This section will look at what participants identify as the most influential factor between shared knowledge, mutual trust and communication.

The **Application analyst 1** said “shared knowledge is more important when compared with trust and communication”. Furthermore, “at the end of the project the client will need to have the ability to maintain the system on their own without the intervention from the service provider” (**Application analyst 1**). The **Supervisor** concurs with **Application analyst 1** and said, “shared knowledge is more important because it’s kind of keeping the ball rolling for the other two factors” (**Supervisor**). “When you share knowledge, people begin to trust you and give a gap for information” (**Supervisor**).

There are five study participants who disagree with shared knowledge being the most important factor, namely, Application analyst 2, Application analyst 3, Deputy Head, IT project manager and Security specialist. They said good communication is more important than the others (**Application analyst 2; Application analyst 3; Deputy Head; IT project manager, Security specialist**). “We need to make sure we communicate the right type of information to each other” (**IT project manager**). “Communication is a foundation for other factors” (**Security specialist**).

The Senior manager 1 and 2 and IT Program manager said they all played an important and equal role during a project. “They are all important and somehow, they all depend on each other, even though trust might be an all-round factor because it would be difficult to share knowledge and communicate if you do not trust each other (**Senior manager 2**). “I think they are all important, because the mutual trust can be born out of the other two (they are all inter-linked to each other) even though it comes at later stage” (**Senior manager 1**). “They all play an equal role; they are all inter-related (one needs one another)” (**IT program manager**).

In summary, two study participants from different departments said shared knowledge is the most important factor. Both these study participants have 3 to 4 years' experience working in outsourced projects. Then there are five study participants saying communication is the most influential as it is the foundation for the rest of the factors. Two of the five are in the same department and the rest are from different departments. The experience of these five study participants ranges from 2 to 7 years. The last three study participants said they are all linked to each other; therefore, they play an equal role. The last 3 participants are in senior roles and have been working in more projects than the other study participants: ranging from 5 to 23 years of experience. This observation by the researcher is not to say the last three study participants' observation is more important than the others but basically to make the reader understand that the more experience you have the more your observation may differ from the others with less experience.

5.3.5 The impact institutional arrangements have on organisational factors (P5)

This section will look at how having similar and different organisational cultures impacts the role of organisational factors in IT outsourcing. The impact on communication of having a highly regulated, or less regulated environment is also discussed.

5.3.5.1 Different organisational culture's impact on trust

The researcher observed that having different organisational cultures does not impact trust between the client and the service provider. This is because there are contracts in place the service provider needs to abide by; the service provider basically needs to put their organisation's way of work aside and follow that of the clients. Quotes from the study participants support this, "We had a service provider that had different processes compared to us, but this did not hinder us a team from finding a common ground for working" (**Application analyst 1**). "The service provider must inherit the client's culture" (**Deputy head**). "When the service provider agrees to the client's outlined processes; even if their cultures are different the service provider needs to comply because it is the taxpayer's money that is being utilised" (**Senior manager 2**).

The IT Project manager agreed with these comments to some extent saying that organisational culture has nothing to do with trust; while the participants discussed above, said organisational culture does not impact trust. The **IT project manager** said, "I only trust people who deliver work and an organisation's culture has nothing to do with trust". This seems to be suggesting that if organisations were not controlled by a contract, then organisational factors would impact the way of working. However, eThekweni ensures that all projects have well defined contracts that service providers are required to abide by; so, it does not become a problem. A **Senior manager** said, "I would not want to associate an individual's way of work with an organisation's culture.

We normally set down rules on how work must be done and there are monitoring tools that are used to gauge people's daily tasks like daily meetings. An example of an incident that happened with a service provider: Computers were lost/stolen but we managed to find them. I would say this kind of behavior had nothing to do with the service provider's culture but a person's values." (**Senior manager 1**). "The service provider did what the Municipality would have done if we were in similar situation" (**Senior manager 1**).

5.3.5.2 Similar organisational culture's impact on trust

Nine participants of the study said similar organisational culture does not play a role in influencing trust. The **Deputy head** said, "Trust is established at the beginning of the project". It was mentioned above that when the service provider is appointed for the project it means there is some level of trust of the service provider. The client trusts that they will deliver the intended work. The **Supervisor** said, "we are not going to trust a service provider that has a culture similar to ours as the Municipality". This was a very interesting statement compared to the other study participants. The supervisor continued to say, "as the government we always expect the client to present a higher level of standard than us, therefore if the service provider's culture is similar, we normally do not trust you" (**Supervisor**). When prompted by the researcher on what the study participant meant by "having high standards" they said, the service provider's performance of the work must be better than that of the internal staff i.e., their work must abide by the best industry practices.

5.3.5.3 Different organisational culture's impact on the quality of communication

Six participants of the study said different organisational cultures do impact the quality of communication negatively during an IT outsourcing project. There was an instance where the service provider had different processes than the Municipality i.e., the Municipality has a standard way of submitting documentation. Because the service provider did not know this, they ended up asking; what was expected from them as far as documentation is concerned and asking for templates they can use. "At the end of the day, the service provider needs to conform to what the client (wants) because their main objective is to please the client" (**Application analyst 1**). "Service provider must inherit culture of eThekweni" (**Deputy head**). "The consultants need to understand our culture and way of work" (**Security specialist**). A communication strategy needs to be discussed in the beginning of the project (**Senior manager 1**). This could be the media the team were going to use for communicating the progress of the project such as meetings, steering committees, emails and reports. "We rely on technology like using Zoom and Teams for our meetings unlike face-to-face meet ups" (**IT project manager**). Four participants found no relation between different organisational cultures and quality of communication.

It is important to have well defined contracts that explicitly state how the relationship between the service provider and a client will work. When the service provider agrees to the contract, they need to specify working conditions that satisfy the client.

5.3.5.4 Similar organisational culture's impact on communication

Seven study participants said communication is not impacted when the service provider and client have similar organisational cultures (**IT Project manager; IT program manager; Application analyst 2; Application analyst 3; Senior manager 2; Supervisor; Security specialist**). There were three participants who said communication is not impacted by organisational culture (Deputy head; Application analyst 1; Senior manager 1). The **Deputy head** elaborated, "Culture does not dictate communication because there is an initiation meeting where we agree on date of contract, obligations and how issues will be communicated. The service provider is sometimes given the opportunity to provide the project plan and within that plan we can stipulate how communication should take place in terms of any change envisage and any approvals and these things will define the communication". The **Senior manager** also referenced the initiation meeting that happens between the service provider and the client where they discuss and agree how they are going to communicate on issues; how work will be received from eThekwini as well as agree on a project plan and timeline.

5.3.5.5 Highly regulated environment's impact on quality of communication

There are five study participants who said a highly regulated environment does impact communication (Senior manager 2; Supervisor; IT Project manager; Application analyst 3; Application analyst 2). The **IT project manager** said, "eThekwini Municipality uses a hierarchical structure and sometimes to get a signature for something to be done would take longer than expected". The **Senior manager** said, "because of the Municipality organisational laws and regulations that need to be followed during a project, in an instance where you need work to be approved by higher management other people/organisations would have already implemented this kind of technology leaving us with outdated technology". "Some processes delay the communication or rather the entire resolution of an issue" (**Application analyst 2**). "Sometimes you might find that there is something that is needed to be delivered but you need to get approval first from high management and most of the times the approval process is very long and affect quality of communication because it ends up delaying everything" (**Senior manager 2**). Based on the researcher's observation delaying appears to be the order of the day at the Municipality because of the prolonged approval processes. These delays have negative repercussions for the Municipality as mentioned by Application analyst 2.

There are three study participants who said the opposite i.e. who suggest a highly regulated environment does not impact communication. The **Application analyst 1** said, “In our department the structure is different, so some decisions are made without the approval from the higher management, therefore, it is not so much of a controlled environment”. The Security specialist did not see communicating as difficult in a regulated environment but rather a protocol issue: “I would not say it’s more difficult to communicate rather more of a protocol issue of doing things within an organisation” (**Security specialist**). Furthermore, “there are a lot of regulation in the beginning of the outsourcing process but once the actual work start it is all about project goals” (**Security specialist**). “From a requirements perspective it depends on what you want to do and how you want it to be done and obviously there are regulations, example: you have to comply with the protection of personal information, and this is where the SLA comes to play” (**Security specialist**)

Communicating with the service provider during the project is vital as it sets the expectation of both parties. There is one study participant who said that in a regulated environment communication can be affected but to a lesser extent. The **Senior manager 1** said “In my case regulations do not affect the quality of communication because when you actually do plan because there are processes that will take four to five days to be completed. So, it is very important to inform the service provider from the start.” The Deputy head suggested that communication can be affected in two ways: communication can improve, and it can also have a negative impact. “If a message is not understood this can send out the wrong message to the audience” (**Deputy Head**).

5.3.6 Institutional arrangements limit technology implementation (P10)

All 10 of the study participants agree that institutional arrangements limit technology implementation. However, institutional arrangements involve both the organisational culture and the laws and regulations. The researcher found most responses were about organisational culture rather than institutional arrangements.

5.3.6.1 Organisational culture limits technology implementation

To an extent organisational culture can delay project/ technology implementation because you may need someone’s approval before the actual process can go further and the person who needs to give the approval is not available (**IT program manager**). Sometimes the scope of the project may not be met because of different cultures and sometimes the regulations of the company is strict (**IT project manager**).

5.3.6.2 Laws and regulations limit technology implementation

The organisational laws and regulations need to be followed. The challenge is that by the time you get approval other people or organisations would already be exposed; be using the new technology, or even see the technology as outdated because there is always new IT innovations or developments (**Senior manager 2**). An example was given by **Application analyst 1**, “there is a huge project I have been doing for the past four years it involves a lot of stakeholders (Revenue, Water, Electricity, etc.) and because of the culture that the Municipality has; the projects need to satisfy certain individuals within the Municipality. A service provider can come in to demonstrate the work that has been done and in the next meeting you notice there is now a new service provider who is demonstrating the same system. This changing of service providers in the middle of the project delays the progress of the project.” The observation made by the researcher is that service providers are indirectly appointed by people outside the direct department dealing with them. Municipality departments are highly politicised, and their activities are seen as highly political.

The security specialist gave an example about the laws and regulations of different countries when it comes to the protection of personal information. “In a project if there is to be a transborder transfer of information you need to ensure that the other country has similar laws and regulation as SA. One cannot share information with another country if they do not have privacy protection laws. Therefore, the laws and regulations in institutional arrangements do play a role in the project implementation.” (**Security specialist**).

5.3.7 Measures of a successful project (P9)

Seven participants of the study said the project objectives will determine whether a project has been a success or a failure. Project objectives are written in a business case (Projectmanagement, 2020). A business case is a document that justifies the reason for undertaking a project (Projectmanagement, 2020). Project objectives are what you plan to achieve by the end of a project (Projectmanagement, 2020). For example, “A project is said to be successful if the initial objectives of the project are met and implemented at the end of the project” (**Security specialist**). “We measure a project success by ticking that the objectives of the project have been met as well as the customer is happy” (**Program manager**).

The business case must identify the return on an investment that is expected at the end of the project. Return on investment (ROI) is a performance measure used to evaluate the efficiency or profitability of an investment (Fernando, 2021). The Deputy head said, “Once the project has

completed, it is important to go back to the business case and see whether the things we said need to be implemented is done correctly and furthermore look at if the implemented work is showing returns to the organisation.” Return on investment is all about the value gained and returns on IT sometimes don’t come in cash form, but in the value added (**Deputy head**). This means ROI can sometimes be considered to be positive if there is an increased adoption of the implemented technology.

One study participant interestingly mentioned the Revenue Management System project that was initiated in 2002. In the literature review this project is mentioned as an example of one of the big projects that ran into challenges during the implementation. The main issues the project faced was the ballooning of cost that the project had cost the Municipality. In 2018 the Municipality was still paying consultants money for any changes and maintenance of the system (Shaikh, 2018). What is interesting is the participant said, “the billing system is designed to save the rate payers cost as they can make payments online to avoid long queues and also walk into the municipal offices to make payments” (**Senior manager**). However, this project has indirectly cost the ratepayers more than R620 million from the initial project budget of R150 million (Tribune, 2016; Manda, 2015).

The Senior manager used an example of a recent project they have implemented due to Coronavirus. Coronavirus has pushed most companies to be innovative with new ways of work. Coronavirus, also known as COVID19, is an infectious disease that was discovered in 2019 in Wuhan, China. The spread of the disease has led many people to work from home to mitigate the increase of people getting infected with the virus. The Municipality, like many other organisations have been forced by the disease to become innovative. “The Municipality’s latest project was the introduction of Microsoft Teams to 10 000 employees as well as the rollout of laptops and desktops in 2020” (**Senior manager 2**). “The success of the project will be a result of 10 000 eThekweni Municipality employees that have a desktop or laptop and Microsoft Teams installed on the machines” (**Senior manager 2**). The benefit of successfully executing this project at a short space of time is that work will continue as normal although employees will be working from home.

There were six study participants, three from one department that mentioned the functionality of the system is a critical factor for a project success. “The user must be able to access and use the system without encountering issues” (**IT project manager**). “We measure a project’s success by functionality of a system and if the standards required are met” (**Application analyst 3**).

5.4 Conclusion

The IMU unit uses multiple types of outsourcing. The type of outsourcing chosen depends on the

nature of the project. The success of the project is measured mainly by the meeting of project objectives. Other study participants added that there must be a return on the investment to say a project has been a success. According to the Municipality, working with a client that has different organisational culture to theirs does not affect the implementation of the project because the service provider adopts their way of work. The laws and regulations in the Municipality sometimes delay the implementation of the project.

A good relationship is managed by having a well-constructed contract accompanied by an SLA. Trust in the organisation is also associated with a contract and the mere appointment of a service provider speaks to the initial trust that is established in the beginning of the relationship. The next level of trust is established when the service provider actually does the work according to the project plan. An additional level of trust is achieved when the service provider has completed the project according to the project objective and the client feels comfortable to recommend this service provider based on previous interaction. The Municipality believes shared knowledge is very important in the Municipality as it influences a lot of other factors during a project like communication and trust among team members. However, based on the study participants responses it appears the service providers share very limited information with the client because they do not want to lose the opportunity of being called again for assistance. There were some instances where shared knowledge needed to be extended to the users as well to ensure the adoption of the technology. The next chapter will reflect on the findings of this chapter and link it to the literature from other authors.

CHAPTER 6: ANALYSIS AND IMPLICATIONS FOR PRACTITIONERS

6.1 Introduction

Chapter 6 will align the results from Chapter 5 with this study's research questions as noted in Chapter 1.4. The findings from the study participants were categorised based on the relationships between the factors of the conceptual framework. The purpose of this chapter is to extract a conclusion for the four research question and also provide suggestions to practitioners in relation to IT outsourcing in the public sector.

6.2 IT outsourcing practices in the IMU

The research question that is aligned to the practices that the IMU uses when outsourcing their IT is *“How do eThekweni Municipality's Information Management Unit employees practice IT outsourcing?”*.

According to the responses received from the participants, the Municipality uses multiple types of outsourcing to carry out the IT projects. There were four study participants that said in the projects they have been involved in; they used single sourcing. Karydas (2017) agrees with the four participants, the author says using one service provider results in better quality products. Additionally, there is better responsiveness between the service provider and client since the service provider only has to worry about communicating with one party and this saves time (Karydas, 2017). Konnings et al., (2018) and Bayreuth (2014) in their IT outsourcing satisfaction survey, and a 2020 survey by Deloitte on global outsourcing, respectively; said an increasing number of companies have transformed their method of IT outsourcing from single sourcing to multi-sourcing. This is because around 60% of IT outsourcing projects were not able to meet all of their pre-defined targets (Bayreuth 2014). Given that there is no one company that is best-in-class for all services. The researcher could not find any recent literature on co-sourcing, but there was one paper dated 2004 by Edguer and Pervan that talks about the topic from the public sector's point of view. While there were some time and resource limitations for their case study, co-sourcing was revealed as a method that could successfully be implemented by the public sector if critical factor identification was implemented correctly (Edguer and Pervan, 2004). However, this conclusion was made more than a decade ago and a lot has changed according to Deloitte's global survey on IT outsourcing.

6.2.1. Implications for practitioners: IT outsourcing practices in the public sector

Literature shows little to no information on the type of IT outsourcing that will best work for the public sector. As mentioned above, a paper the researcher was able to locate was dated 2004. This paper briefly looked at co-sourcing as a strategy that can be implemented by the public sector. However, a 2020 Deloitte Global Outsourcing survey looking at both the public and private sector said an increasing number of companies have transformed their method of IT outsourcing from single sourcing to multi-sourcing (Deloitte, 2020). Organisations must be aware that multi-sourcing is a “complex beast” (Kobayashi-Hilary, 2006), and need to be well prepared: the arrangement, management, and monitoring phase requires a well-designed strategy; and conducting an analysis of processes and infrastructure; strengthening internal capabilities; ensuring information flow, and shaping a proper governance and result measurement systems are necessary (Loboda, 2014).

Clients may consider multi-sourcing as an effective plan to discourage opportunism, especially when they does not have previous experience with the service provider, and when the project that need implementation is large. Large projects may also be customised to match the multi-sourcing strategy. Clients that have limited experience in controlling IT outsourcing relationships is recommended to first gather experience in managing single-sourcing projects before they progress to multi-sourcing. Furthermore, clients are ought to be aware that their choice of technologies that are mastered by a few service providers may limit them in their ability to leverage multi-sourcing (Loboda, 2014).

The next paragraphs will look at the constructs from Duhamel’s diagram, as covered by research questions 1.4. The first question looks at the organisational factors of mutual trust, communication and interface characteristics. The second question looks at the institutional arrangements which include organisational culture and laws and regulations. The last question looks at measures that are used to rate whether the project was successful or not.

6.3 Organisational factors as CSF’s during IT outsourcing in the IMU

The research question that is aligned to the organisational factors that IMU considers as CSF’s during IT outsourcing is *“To what extent do eThekweni Municipality’s Information Management Unit employees consider organisational factors (**mutual trust, shared knowledge and interface characteristics**) as critical success factors in an IT outsourcing relationship?”*.

Mutual trust

In the literature, [Samaddar & Kadiyala \(2006\)](#) said mutual trust is important for outsourcing success. Further, [Hlawu-Chihwenga \(2013\)](#) found trust between a service provider and a client as a leading critical success factor in IT outsourcing. These views are echoed by six study participants (Application analyst 1; Application analyst 2; Application analyst 3; Senior manager 2; IT project manager; IT Program manager; Security specialist) in Section 5.7.3. Application analyst 1 said, a service provider is selected based on their ability to deliver; this means the client trusts that the service provider will get the job done. The researcher did not probe the study participant to find out what level of trust do the service provider and the client have initially. The researcher observed that the study participant said the people that have been appointed are selected based on the client trusting that the service provider has the ability to take on the proposed project. Application analyst 1 also added that sometimes trust is based on previous experience with the service provider. That means the client is trusted because of the work that they delivered in the past. Kipkosgei et al (2020) said the service provider and the client feel a sense of concern about how the new relationship will work when trust is at its initial fragile stage. To an extent this is different from what nine study participants said: Application analyst 2 gave an example of how trust, in its initial stage, had impacted her. She said that when she joined the company, she had to draw up reports, but initially was given very little data to draw the reports. Fast forward to today, where the participant felt she has gained a lot of trust from the team members because she now compiles a lot of reports for eThekweni Municipality. The application analysts experience reflects a different situation to that of Kipkosgei et al (2020). The application analyst was given little work because she was still new to the job and perhaps, they did not want to overwhelm her. But the fact that she was hired was because she had shown the ability of being able to do the work and therefore was trusted. In conclusion, the researcher's observation from the study participants responses is that the Municipality will not hire a service provider they do not trust.

There were two study participants who said trust do not influence project implementation. The Deputy head and Senior manager 1 did not view mutual trust as a critical success factor for a project. This sentiment is different from what the researcher was able to find in the literature. Looking at the positions of the 2 study participants and the experience they have with outsourcing ranging from 3 to 23 years. One cannot discount their point of view as they are clearly very experienced. The deputy head bluntly said, repeatedly, as well as in answers to other questions, that for him (based on experience) trust does not exist in business. Both these study participants further elaborated that for them the important factor during a project is a good written and managed project and an SLA. They used these documents to manage the service provider.

Shared knowledge

In the literature shared knowledge is seen as the most strategically important resource for learning. If executed correctly it can lead to a successful implementation of a project (Park and Lee, 2014; Kipkosgei, 2020). The same sentiments are shared by all (10) study participants. The 10 study participants found shared knowledge a critical success factor during a project. The security specialist mentioned that keeping information away from the rest of the team members could hamper the progress of the entire project. Moreover, if information is shared with the team, it will aid efficiency and the whole team will have a shared understanding of what is expected of them (**Program manager**). Application analysts 1 and 2 went further spoke about how experienced people can help with transferring their skills to the other team members during a project.

Although all study participants found shared knowledge critical to a project, the Application analyst 3 said that sometimes the service providers do not share information with them. When the researcher probed the study participant to find out the reason behind this, the study participant said this happens in cases where work has been assigned to one service provider. The study participant said this was a disadvantage to the Municipality because during the handover process, the service providers share very little information with them. They do this because they want the Municipality to prolong their project appointment from being finalised at implementation, to continue into a maintenance contract. The researcher's observation of this situation is that the Municipality would feel trapped by the service providers behaviour. This could potentially leave the service provider with a bad name in the industry.

Communication

Several authors in the literature found communication crucial to a project but stressed it relies on the participants being actively involved ([Gottschalk & Solli-Sæther, 2005](#); [Hlawu-Chihwenga, 2013](#); [Ram and Corkindale, 2014](#)). [Mavetera et al. \(2014\)](#) found that communication channels need to be open and efficient for communication to take place. This means the choice of communication medium is important to keep the information flowing. All participants agree that communication plays an immense role in the successful implementation of a project. The IT Project manager said they now rely on technologies like Zoom and MS Teams for meetings rather than face-to-face meetings. The same study participant in section 5.3.4.1. continued to explain the reason for relying heavily on these mediums. Email is another communication medium that is used by the Municipality to communicate with project team members. The key information the Supervisor wanted to get across is that emails can sometimes lead to wrong expectation on the part of the sender. If there was no communication strategy

discussed in the beginning, the service provider can send an email to the client after hours but should not expect an immediate response. The lack of a clear communication strategy can hamper the relationship between both parties.

In summary, Mutual trust, shared knowledge, and interface characteristics (communication) are viewed as CSF that, to a large extent, are important for the success of a project. However, this study highlights that the sharing of knowledge and communication are the most influential factors during a project. When the researcher asked participants to compare the relative importance of the three CSF, five study participants felt that communication was the most critical out of the three because it forms the foundation for the other factors. This was followed by two participants who felt shared knowledge was the most influential factor. Mutual trust was not highlighted by any participants as the most critical factor. The remaining participants rather felt that all three factors depend on each other and play an equal role.

6.3.1 Implications for practitioners: organisational factors in the public sector

The literature showed mutual trust, shared knowledge, and communication to be very important CSF during outsourcing (Section 3.3). It also mentioned that these CSFs play a different role during a project hence they are all important to a large extent. Shared knowledge is used as a strategical tool for learning. Communication is what will channel the sharing of knowledge through different communication mediums, and mutual trust is what will make the service provider comfortable when implementing the project because they trust each other that the work that need to take place will happen. From the study participants responses, the only factor that was not considered by 100% of the study participants as important, was trust. The reasons given stress the belief that trust is a non-existent factor in business which is why they stress a contract and SLA is very important as a means of ensuring the required outcome. A contract and SLA, if well designed and managed efficiently, can contribute to the ultimate success of IT outsourcing (Qi and Chau 2015; Goo and Nam, 2007; Suzanne & Benoit, 2015). Researchers say finding the right supplier and establishing workable agreements SLAs are of paramount importance (Isaías Scalabrin Bianchi, 2014). Therefore, when clients do not want to have to rely on trusting the appointed service provider, they need to make sure the contracts and SLAs are well written and managed by the project managers.

6.4 Institutional arrangements as CSF's during IT outsourcing in the IMU

The research question that is aligned to the institutional arrangements that IMU considers as CSF's during IT outsourcing is *“To what extent do eThekweni Municipality's Information*

Management Unit employees consider institutional arrangements (Organisational culture and laws and regulations) as critical success factors in an IT outsourcing relationship?”.

According to the responses from the study participants, institutional arrangements are considered, but to a lesser extent, during an IT outsourcing relationship. This question will be divided into 2 sections dealing with the organisational culture and laws and regulations, respectively.

Organisational culture

When it comes to organisational culture, three study participants (Deputy head, IT Project manager, security specialist) said the service provider needed to adopt the client’s way of work, beliefs, values, etc. “The service provider needs to understand our culture so we can work as one team” (Security specialist). Kieczka (2020) states, organisational culture is built over time and is consolidated within people and organisations, becoming a structural element. Therefore, an immediate change in culture to accommodate another organisation, would not work practically. The Municipality culture and their processes do not work well in an IT environment that is fast moving and innovative. The processes that are put in place are slow and approval of documents take a while and has been a disadvantage for some of the projects (Senior Manager 2).

Laws and regulations

A service level agreement (SLA) and outsourcing contracts were referenced by participants as documents that force the service provider to abide by eThekweni’s laws and regulation. Besides these two documents, there were no processes mentioned by the participants that the Municipality use when outsourcing a project. The study participants discussed this topic in a vague manner (see Section 5.10).

In the literature, researchers agree that finding the right service provider and establishing workable agreements or SLAs are of paramount importance (Isaías Scalabrin Bianchi, 2014). Having a well-structured contract is the solution to a successful IT outsourcing relationship (Suzanne & Benoit, 2015). The Deputy head and IT Program manager agree that a contract that is well structured and, most importantly is well managed, will lead to good results. Also, a good relationship is governed by SLA’s (Security specialist). The SLA is used as an instrument used to measure the level of quality implemented as compared to the agreed upon level (Tieva, 2010). The SLA is an additional document in the contract arrangement; can be located in the appendix to a service contract (Tieva, 2010). Two participants mention the importance of having an SLA in place for a successful client and service provider relationship: “The relationship between the

client and service provider is governed by a SLA” (**Senior manager 1**), and “As long as the service provider stick to SLA that is agreed to in the beginning of relationship then the project will be a success” (**Security specialist**).

In conclusion, the Municipality’s institutional arrangements affect the organisation in both a positive and negative way. It is important for the service provider to research its client’s organisational culture to avoid being in a situation where their way of work clashes with the client’s way of work. There are many formal documents that are involved in a creating this form of a partnership; but a contract and an SLA was the most referenced when the study participants responded to the question on laws and regulations of the Municipality. The success of IT outsourcing is from a contract and SLA that is well designed and efficiently managed throughout the outsourcing relationship.

6.4.1 Implications for practitioners: Institutional arrangements in the public sector

Limited processes were mentioned by the participants; however, they did mention that a lot of the laws and regulations found at the Municipality can limit and possibly delay the actual progress of the project. The practitioners may need to consider reviewing and lessening the strict institutional arrangements, to allow the current IT sector culture that focuses on agility and innovation i.e., a fast-paced environment, to be better accommodated.

6.5 Measurement of a project’s outcomes in the IMU

The research question that is aligned to the measurements that IMU uses to consider a project successful during IT outsourcing is “*How do eThekwin Municipality’s Information Management Unit employees measure the project a success/Failure (outcome)?*”.

All the study participants said the implemented technology has an influence on the outcome. This means the technology or product that has been implemented will either be a success, or a failure based on a number of criteria. They mentioned a few criteria that should be considered such as system accessibility, usability, ROI, meeting the project objectives, resulting in increase in revenue, and better services being provided to citizens. The literature focuses on time, quality, cost, and project scope (Al-Shaaby and Ahmed, 2018). These two sets of criteria are not so different from each other. However, the obvious difference is that time was seen as the most important criteria by Al-Shaaby and Ahmed (2018), where success is achieved if the project completes according to the schedule. From the participants responses, the project objective appears to be the main criteria with seven participants mentioning that this criterion requires the

team to go back to the business case when the project is completed, to see if the stated project objectives have been met. Two study participants out of the seven were project managers. A business case is written by the owner of the implementation to specify exactly what is being implemented and observation of their comments suggests these participants have either written a business case or have come across it as a fundamental part of their work. This makes sense to the researcher as, from experience, the project managers are the ones who manage the project and make sure the team is on track with what they need to deliver.

The second criterion was the functionality of the product. There were six study participants that referenced this criterion. Three out of six were from the same department (Application analyst 1,2 and 3). During the interviews the researcher's observation of these three participants was that they do the actual work of development and testing of the product, therefore, it makes sense for them to focus on the functionality of the system. The Senior manager was the only participant that mentioned cost as a criterion of project success. Unlike Al-Shaaby and Ahmed (2018)'s definition of cost i.e., on budget, when the participant mentioned cost, it meant what they can save as an organisation once the system has been implemented, and not the actual budget of developing the system. The fact that not even one participant mentions the actual cost (budget) as a criterion was interesting. Based on the researcher's observation, the cost of project implementation is not the main factor considered at eITThekwini. This observation recalls the case of the eThekwini Revenue Management System, that has had the Municipality spending over R650 million when the initial budget was R150 million, more than four times the cost. This also raises red flags when participants have mentioned that service providers do not share enough knowledge during the implementation and handover stage of a project. They indirectly force the Municipality to continue with the partnership

In summary, the study participants have made reference to different criteria, however, the researcher has observed that the criterion each emphasises is based on their role, and work they do, in the project e.g., the project manager made reference to time, cost and scope because they are required to manage these factors during a project, however they do not explicitly manage these factors.

6.5.1 Implications for practitioners: measuring project outcomes in the public sector

Project objects need to be clearly defined and most importantly managed well during the project. The project objectives are what will determine if the project is a success or a failure. The functionality of the project is also an important factor, the system must be user friendly to aid easy technology adoption and easily accessible. Heagney's (2011) Fundamentals of Project

Management makes reference to time, cost and scope which Al-Shaaby and Ahmed (2018) also noted as the main criteria for measuring the project success. To an extent the literature and study participants view are similar. Heagney (2011) says a project should have explicit starting and ending points (time), a budget (cost) and clear scope of work to be complete. These factors are referred to by other project management books as key factors that a project must consider (Heagney, 2011). Two factors are also referenced by the study participants using terms such as project objectives similar to scope, cost which the Municipality refer to as the expenditure budget. These three measures are represented on each side of a triangle, are in tension with each other and have equal importance. Heagney (2011) says of the three factors it is important they are no imbalance in them as that can kill a project, therefore, the practitioners should consider making these the three factors they focus on when measuring the success or failure of a project.

6.6 Conclusion

In conclusion, this chapter looked at answering the four research questions based on the responses from the study participants. When the clients are making the decision to outsource their IT, they must research the type of outsourcing that will best suit the nature of the project. Both the public and private sectors are moving towards multi-sourcing because there is no one service provider that can provide all the work that is needed. However, this type of outsourcing is a “complex beast” and the client must be well prepared for it. The organisational factors in the conceptual framework to a large extent are considered by the Municipality because they all play important and different roles during a project. Shared knowledge is used as a strategical tool for learning. Communication is what will channel the sharing of knowledge through different communication mediums, and mutual trust is what will make the service provider comfortable when implementing the project because they trust each other that the work that need to take place will happen. The institutional arrangements in terms of the procedures in the Municipality are borne in mind during outsourcing projects but need to be revisited because they support a different mode of operation that does not work well within the current fast paced IT environment. The result of a project relies on how well the project was executed. Time, Cost and Scope are the three most important factors that the Municipality must focus on during a project. These factors can measure the outcome of a project. However, when it comes to cost the Municipality considers whether the implementation will save money in terms of expenditure budget and not real costs to the ratepayers.

CHAPTER 7: CONCLUSION AND RECOMMENDATION

7.1 Introduction

In this chapter concluding ideas originating from the four research questions from 1.4 will be discussed. Furthermore, the study limitations and approaches for further research will also be considered for this chapter.

7.2 Research questions concluding remarks

Information technology outsourcing has been practiced by many organisations since the 1960's, still continues today and is forecasted to grow by 98 billion during 2020-2024. The practice is very complex, and organisations are still researching ways this practice will work best in their organisation. Organisations choose to outsource because they are looking for expertise that is not provided by their organisations and also because it is cheaper to outsource. This study aims to look at the impact of implementing Duhamel's critical success factors during IT outsourcing at eThekweni Municipality, KwaZulu-Natal, South Africa. The results for the research questions were obtained from qualitative data.

Research Question 1: How do eThekweni Municipality's Information Management Unit employees practice IT outsourcing?

The IMU practice IT outsourcing using multiple types of outsourcing (single-sourcing, multi-sourcing, hybrid sourcing). The Municipality chooses the type of outsourcing based on the project to be outsourced and to a large and moderate extent the chosen type works for the organisation. The organisation wants to get to a stage where the internal resources are involved during outsourcing to avoid reluctance of handovers from the service providers. Having a good working relationship with a service provider is useful during outsourcing. The benefit of a good relationship is having prompt access/replies from the service provider; good communication flow; and as a result, better quality products are implemented. However, managing a relationship is hard and the Municipality makes use of two written documents (outsourcing contract and SLA) to make sure the relationship is managed well. Efficiently managing the two documents will also lead to a successful project.

Research Question 2: To what extent do eThekweni Municipality's Information Management Unit employees consider organisational factors (trust, shared knowledge and interface characteristics) as critical success factors in an IT outsourcing relationship?

Trust, shared knowledge, and interface characteristics are, to a large extent, considered during a project. Although some aspects are considered more important than others depending on the role of the participant in the project. The Municipality appoints service providers that they trust. The level of trust during this phase is based on the service provider's reputation and references and based on previous successful experiences with the eThekweni Municipality. Sometimes trust is replaced by a contract and SLA at the Municipality, because trust does not exist in the business based on previous experiences. Trust is a factor that evolves over time, and this advancement is very important in the IT environment because the work that is done by an individual in a team is co-dependent. At some point in the project the individuals need to integrate the work to produce one product.

When the service provider shares knowledge with the client that means there is some level of trust between both parties. As long as the knowledge being shared is accurate and will not intentionally obstruct the progress of the project. Having a flow of knowledge in a team encourages communication because every team member has a shared understanding of what needs to be done in the project. This shared understanding will result in a successful implementation of the project. Communication is the foundation of shared knowledge and trust. These factors are important in a project, and they work together but have different roles as explained in Section 6.3.1.

Research Question 3: To what extent do eThekweni Municipality's Information Management Unit employees consider institutional arrangements (organisational culture and laws and regulations) as critical success factors in an IT outsourcing relationship?

Institutional arrangements are important in the Municipality. However, adhering to the strict processes can delay the actual progression of a project. Some projects may take a long time to complete because the projects need to satisfy some departments and individuals' in the Municipality. The service provider needs to adhere to the Municipality's culture during a project to avoid an instance where there is a clash of values and beliefs.

Research Question 4: How do eThekweni Municipality's Information Management Unit employees measure the project outcome as a success or Failure?

The success of a project is measured by the number of people adopting the technology. It is important for the product to be easily accessible and user friendly. There is a business case that is drafted at the beginning of the project that captures the reason for implementing the project. In this document there are the project objectives that the project needs to achieve. These objectives are very important because they guide the team in terms of what they should focus on during implementation. The same document specifies the ROI, which is also used to measure the project.

Cost is an important measure because the Municipality is servicing the people with the money that is collected from them. The Municipality is always under scrutiny when it comes to the taxpayer's money, therefore, they need to make sure the implementation of the project is implemented within budget.

7.3 Limitations

The limitations for this study were access to study participants, as detailed in Chapter 4. The collection of data took place late 2020 when the world was experiencing a pandemic. Because of this, the researcher had to conduct interviews using Zoom. The other downside of using technologies to conduct interviews is the connectivity issues that were experienced by the researcher and the study participant. This was due to load shedding that SA was implementing. The researcher had to reschedule interviews, and this was a disadvantage for the researcher because the study participant would not always arrive to the next interview, finding it to be inconvenient to reschedule during difficult, pandemic and lockdown working conditions.

The Municipality has seven departments and the researcher initially wanted to interview study participants from all the departments, to understand if all the seven departments implemented outsourcing differently. The researcher could not gain a study participant from the GIS department, so this was not possible. Emails were sent to all the departments, but the response rate was poor.

Lastly, the study participants did not provide comprehensive answers during their responses to the questions. The researcher would attempt to probe further and ask the study participants to elaborate more on their answers but were not always successful. The researcher wanted to make the study participants feel comfortable during the session and made sure that they understood clearly what the question was asking. Although a pilot was done on one individual, and they reported being comfortable with the questions, during the interview the researcher found the study participants hesitant at times even after an example was provided. Duhamel's research used vocabulary unfamiliar to the participants and while the researcher tried to simplify the meaning of some of these, it did not always seem successful as they still showed some sense of awkwardness when answering e.g., interface characteristics refer to communication devices.

7.4 Future study

The study focused on only one Municipality, which was chosen based on the number of people it services and its achievements thus far and reputation as a large Municipality. Future studies could include other municipalities whose departments are involved with IT outsourcing, including different sized municipalities as well as those based in other provinces of South

Africa. It was also flagged by the study participants that service providers do not want to share more knowledge on the systems they have developed. The service provider and the client could be involved for future studies. This study could be a focus group styled study where the researcher attempts to understand the issue behind the sharing of knowledge during and after the project.

Lastly, the researcher wanted to look at the institutional arrangements in a comprehensive manner, but there was very little information shared on this topic. The study participants did mention that these arrangements delay the progress of a project. Therefore, future research may unpack the institutional arrangements even further and discuss ways that they may be adjusted to match up to the ever-changing IT environment.

7.5 Conclusion

The eThekweni Municipality was selected for this study because it is located in the largest city in the province, meaning it services more civilians as compared to the other municipalities. The Municipality is innovative in terms of IT service delivery implementations and has won an Innovator of the Year award in 2019 and also introduced the smart city vision to eThekweni. The Municipality is also well known in the media for its challenges with the RMS system that has been hemorrhaging money because of bad decisions being made during the project. This project was an outsourced project. Outsourcing IT has its pros and cons and because of this the reason a company may choose to outsource needs to be researched and understood in its specific context. The organisation needs to strategically look at the project they want to outsource and the type of outsourcing that would fit the project. The Municipality's culture and laws and regulations need to be revisited and adjusted to avoid delays on projects. The projects need to be managed efficiently by focusing more on time, scope and cost. Lastly, the Municipality must bring the internal resources closer during the project's implementations so that when the partnership with the service provider comes to an end, the internal resource can continue with the work.

Appendix 1: Consent Letter

University of KwaZulu-Natal

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Project Title: THE IMPACT OF IMPLEMENTING CRITICAL SUCCESS FACTORS DURING INFORMATION TECHNOLOGY OUTSOURCING: ETHEKWINI METROPOLITAN MUNICIPALITY CASE STUDY

Information Sheet and Consent to Participate in Research

28 August 2020

Greetings

REQUEST TO PARTICIPATE IN A VOLUNTARY, CONFIDENTIAL RESEARCH PROJECT

I am a student in the School of Management, IT and Governance at the University of KwaZulu-Natal, doing research on Information Technology Outsourcing Success Factors: eThekwin Municipality case study for my MCom qualification. You have been selected as a potential respondent for participation in a voluntary, anonymous interview that I am conducting. I would appreciate your participation and your permission to use your responses for official research purposes only. Your personal identity will be treated with the utmost confidentiality throughout the interview and will at no stage appear in print. The data will be stored securely throughout the study, archived safely for a period of 5 years and destroyed thereafter. If you have any queries or concerns about completing the questionnaire, or about participating in this study, feel free to contact me, or my supervisor at the numbers listed above.

The aim of the study is to understand how eThekwin Municipality outsource their IT by analysing factors such as organisational culture, laws and regulation, and how mutual trust plays a role in shared knowledge and the outcomes of the project.

The objectives of the study are as follows:

- **To determine how do eThekwin Municipality's Information Management**
Unit employees practice IT outsourcing?
- **To determine how do eThekwin Municipality's Information Management Unit employees consider the outcomes of a project a success/Failure?**
- **To determine to what extent do eThekwin Municipality's Information Management Unit employees consider organisational factors (trust, shared knowledge and interface characteristics?) as critical success factors in an IT outsourcing relationship?**

To determine to what extent do eThekwin Municipality's Information Management Unit employees consider institutional arrangements

- **(Organisational culture and laws and regulations) as critical success factors in an IT outsourcing relationship?**
- **To determine to what extent do eThekweni Municipality's Information Management Unit employees consider objective and enacted technology as critical success factors in an IT outsourcing relationship?**

Participation is voluntary, please feel free to withdraw at any time and there will be no negative or undesirable consequences to you. Please note that anonymity will be ensured where appropriate (e.g. coded/ disguised names of participants/ respondents/ institutions). I have sent an electronic copy for you to sign giving me consent and permission to use your responses. Can I commence with this interview, it should take only about 20 minutes of your time to do so?

In the event of any problems or concerns/questions you may contact the researcher at (210522946@stu.ukzn.ac.za) or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

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Project Title: THE IMPACT OF IMPLEMENTING CRITICAL SUCCESS FACTORS DURING INFORMATION TECHNOLOGY OUTSOURCING: ETHEKWINI METROPOLITAN MUNICIPALITY CASE STUDY

Declaration of Consent

I _____ have been informed about the study entitled Information Technology Outsourcing Success Factors: eThekwini Metropolitan Municipality case study by Nokulunga Goba
I understand the purpose and procedures of the study.

I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher.

I give permission for an audio recording of my interview. **Yes/No**

Signature of Participant

Date

Appendix 2: Matrix

THE IMPACT OF IMPLEMENTING CRITICAL SUCCESS FACTORS DURING INFORMATION TECHNOLOGY OUTSOURCING: ETHEKWINI METROPOLITAN MUNICIPALITY CASE STUDY			
Matrix			
Research Questions	How to measure this "thing"	Actual questions to ask	Question number
1. How does eThekwini municipality's Information Management Unit employees practice IT outsourcing?	Working for IMU	Do you work in the Information Management Unit? If yes, which department?	1
	Employee's position	What is your position in the department?	2
	Duration of employment	How long have you been working in this department?	3
	IT outsourcing project involvement	Have you ever been involved in ITO projects in this department? If yes, how many ITO projects have you been involved in?	4
	IT outsourcing project role	Can you explain your role in ITO projects in general?	5
	Understanding of IT outsourcing	What is your understanding of IT outsourcing?	6
	Type of IT outsourcing	What type of ITO is used by this department? (Choose from the list)	7
	Expectation	Cont. Question 5, Is this type of ITO delivering expected outcome? (i.e., are the outcomes of the ITO aligning with the stated company strategic objectives?) Can you please explain the option you have chosen further	8
2. In an IT outsourcing relationship, how does eThekwini municipality's Information Management Unit employees consider an IT outsourcing project successful?	Project success	How do you evaluate the overall success of an IT outsourcing project?	11
	IT outsourcing relationship	Does having a good relationship result in a successful IT outsourcing project? Why do you say so?	12
The following questions will be based on a model proposed by Duhamel it is called the Outsourcing Technology Enactment Model. We will look at five CSF proposed by the author for implementation in the public sector. These CSF are: Mutual trust, Shared knowledge, Organisational culture, Laws and regulations, Technology enactment and Outcome.			
3. To what extent does eThekwini municipality's Information Management Unit employees consider organisational factors (Mutual trust, shared knowledge) as critical success factors in an IT outsourcing relationship?	Mutual trust	To what extent does the different levels of trust play a role in influencing the quality of a relationship between a service provider and a client?	14
	Shared knowledge	To what extent does maintaining a regular flow of information in a relationship increase the level of knowledge?	
		What processes/exercises are used to transfer information between a client and service provider to increase the level of knowledge?	
5. To what extent does eThekwini municipality's Information Management Unit employees consider institutional arrangements (Organisational culture and laws and regulations) as critical success factors in an IT outsourcing relationship?	Mutual trust effect on knowledge sharing	To what extent does having mutual trust between both parties create a platform for easy sharing of knowledge?	16
	Organisational Culture	To what extent does having similar corporate culture as organisations play a role in facilitating trust?	22
	Laws and Regulations	To what extent does laws, regulations and contracts play a role in facilitating trust in a relationship?	
5. To what extent does eThekwini municipality's Information Management Unit employees consider technology development as critical success factors in an IT outsourcing relationship?		To what extent does changes/regulations of laws have on the quality of the product? (i.e., Having to adjust an already working product to conform to the new laws and regulation from govt)	23
	Technology enactment	To what extent does technology development depend on the characteristics of the hardware, software and network capacity and capability?	24
		To what extent does the extension of functionality have on the quality of the product?	25
5. To what extent does eThekwini municipality's Information Management Unit employees consider outcome as critical success factors in an IT outsourcing relationship?	Outcome/ final product	To what extent does the outcome (quality of products and services) depend on the effectiveness of the technology used?	

Appendix 3: Interview Questions

Questionnaire Guide

1. Employees

1.1 Do you work in the Information Management Unit? If Yes, which department?

1.2 What is your position in the department?

1.3 How long have you been working in this department?

1.4 Have you ever been involved in ITO projects in this department? If Yes, how many ITO projects have you been involved in?

1.5 Can you explain what your role is in ITO projects in general?

1.6 How would you explain IT outsourcing?

1.7 What type of ITO is used by this department? (choose from the list)

	Tick
1.8.1 Single-sourcing - This is when the organisation depends on their supplier to provide all or most of the IT services.	
1.8.2 Multi-sourcing - This is when the organisation selects the right mix of service providers for the provision of IT services.	
1.8.3 Co-sourcing - This is when the organisation pools their IT requirements and resources together with another organisation's so that a single supplier can provide IT services.	
1.8.4 Hybrid-sourcing (multi-sourcing and co-sourcing) - This is when the organisation pools their IT requirements and resources together with another organisation's and selects the right mix of suppliers for the provision of IT services.	
1.8.5 Other. Please elaborate further.	

1.8 Can you please explain the option you have chosen further?

Is this type of ITO delivering the expected outcome? (i.e. are the outcomes of the ITO aligning with the stated company/Unit objectives?)

	Tick
To a larger extent	
To a lesser extent	
Not at all	

1.9 Does having a good relationship with the service provider result in a successful IT outsourcing project? Why do you say so?

2 The following questions will be based on a model proposed by Duhamel, 2013, it is called the Outsourcing Technology Enactment Model. We will look at five CSF proposed by the author for implementation in the public sector. These CSF are: Mutual trust, Shared knowledge, Organisational culture, Laws and regulations, Technology enactment and Outcome.

2.1 Do different levels of trust play a role in influencing the quality of a communication between a service provider and a client? If yes, to what extent?

2.2 Does shared knowledge play a role in influencing the quality of communication between a service provider and a client? If yes, to what extent?

2.3 Does shared knowledge have an influence on mutual trust between a service provider and a client? If yes, to what extent?

2.4 Does mutual trust have an influence on shared knowledge between a service provider and a client? If yes, to what extent?

2.5 How do organisational factors influence the technology development/
Implementation:

- What role does mutual trust play?
- What role does shared knowledge play?
- What role does communication play?
- Do you think there are factors that are more important than others or do they all play an equal role?" Shared knowledge is more important than the others.

2.6 Does maintaining a regular flow of information in a relationship increase the level of knowledge? If yes to what extent?

2.7 Think about some of the IT outsourcing projects that you have been involved in between eThekwini municipality and a service provider.

- In an instance where the culture of the service provider and eThekwini municipality was different, was the trust between the two-organisation impacted? If yes, how was **trust** impacted?
- In an instance where the culture of the service provider and eThekwini municipality was similar, was **trust** between the two-organisation impacted? If yes, how was trust impacted?

2.8 Think about some of the IT outsourcing projects that you have been involved in between eThekwini municipality and a service provider.

- In an instance where the culture of the service provider and eThekwini municipality was different, was the **communication** between the two-organisation impacted? If yes, how was communication impacted?
- In an instance where the culture of the service provider and eThekwini municipality was similar, was the **communication** between the two-organisation impacted? If yes, how was communication impacted?

2.9 Do you think having a highly regulated environment (controlled environment) plays a role in affecting the quality of communication?

If yes, why do you think it's more difficult to communicate effectively in such environments?

2.10 Do you think institutional arrangements (organisational culture and laws and regulation) constrain (limit) the actual process of technology development/Implementation?

2.11 Does technology development/Implementation depend on the existing hardware, software and network capacity? If yes, to what extent?

2.12 When technology has been developed/Implemented, how do you determine (measure) a project's success or failure?

Appendix 4: Ethical Clearance Letter



18 November 2020

Ms Innocentia Nokulunga Goba (210522946)
School Of Man Info Tech & Gov
Westville Campus

Dear Ms Goba,

Protocol reference number: HSSREC/00002119/2020

Project title: The impact of implementing critical success factors during information technology outsourcing:
EThekweni metropolitan municipality case study.

Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 27 October 2020 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL** on the following condition:

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid until 18 November 2021.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,



Professor Dipane Hlalele (Chair)

/dd

Humanities and Social Sciences Research Ethics Committee

Postal Address: Private Bag X54001, Durban, 4000, South Africa

Telephone: +27 (0)31 260 8350/4557/3587 Email: hssrec@ukzn.ac.za Website: <http://research.ukzn.ac.za/Research-Ethics>

Founding Colleges: Edgewood Howard College Medical School Pietermaritzburg Westville

INSPIRING GREATNESS

Appendix 5: NVivo Code Report Letter

Number	Nodes & Sub-nodes	Files	References
1	Comm = Technology Implementation	10	10
	Communication Technologies	3	4
	Flow of communication	3	3
	Technology Adoption	2	4
2	Dert_Success of Project	10	10
	Costs	2	2
	Project Objectives	7	9
	Return of Investment	4	5
	Usability of System	6	6
3	Different Culture = Comm	10	10
	Communication Strategy	3	3
	Mutuality	2	2
	Personal Values	1	3
4	Different Culture = Trust	10	10
	Contract and Trust	2	2
	Knowledge Sharing	10	24
	Organisational Culture	4	4
	Trust	10	28
5	Good Relationship = Successful ITO Project	10	10
6	Highly Regulated Env_Comm	10	10
7	IA limits TI	10	10
8	ITO_Type = Expected_Outcome	10	10
9	ITO_Type_Used	10	10
10	KS = Comm	10	10
11	KS = MT	10	11
12	KS = MT = Comm	10	10
13	KS = Technology Implementation	10	10
14	MT = KS	10	10
15	MT = Technology Implementation	10	10
	SLA	3	5
16	Project Role	10	10
17	Similar Culture = Comm	10	10
18	Similar Culture = Trust	9	9
19	Trust = Quality Communication	10	10
	Communication	5	6
	Contract	4	6
	Evaluation Process	2	3

Table 1: Count of References per each Theme and Sub-theme











	Roles	Codes	References
	Applications analyst1_Applications	26	30
	Applications analyst2_Applications	23	27
	Applications analyst3_Applications	24	29
	Deputy Head_Enterprise Architecture	29	32
	IT Program Manager_PMO	28	29
	IT Project Manager_PMO	26	33
	IT Security Specialist_Information Security	25	28
	IT Support Supervisor_Customer Service	27	35
	Senior Manager_Electronic Services	28	37
	Senior Manager_IT Support	26	29

Table 2: Count of Code and References per each Role

Appendix 6: Editors Letter

ETHEL ROSS

English language editing and proofreading

24 August 2021

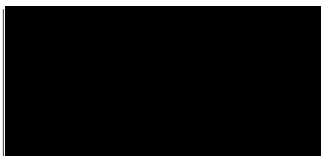
To whomever it may concern:

This letter serves to confirm that I worked as the proofreader and language editor on Nokulunga Goba's Master's thesis:

THE IMPACT OF IMPLEMENTING CRITICAL SUCCESS FACTORS
DURING INFORMATION TECHNOLOGY OUTSOURCING: ETHEKWINI
METROPOLITAN MUNICIPALITY CASE STUDY

In no way did I change the content.

Yours faithfully



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