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**THE ADOPTION OF THE E-PROCUREMENT SYSTEM BY THE ETHEKWINI
MUNICIPALITY FOR SMME OWNERS: THE VIEWS OF SMALL MEDIUM AND
MICRO ENTERPRISE (SMME) OWNERS**

by

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I Perfect Siphellele Duma, student number 9705993 declare that:

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Acknowledgement

This work is dedicated to my late brother Archibald Zwile Duma from whom I drew inspiration throughout the duration of this work. I further dedicate this thesis to my parents, loving sisters, my nephews and nieces and to my one and only daughter Thabisa Duma. I would also like to pass my sincere gratitude to the patience showed by Professor Betty Mubangizi, my supervisor, who gave me hope when I was going through a difficult time in life. Without you Prof, I would have lost hope in life and in pursuing this Masters Programme. Your motivation and encouragement played a huge role - Thank you very much!

LIST OF ABBREVIATIONS

BEE	Black Economic Empowerment
CBZ	Central Bank of Zimbabwe
EC	Ethical Clearance
EU	European Union
EMSDF	eThekwin Municipality Spatial Development Framework
KZN	KwaZulu Natal
ITC	Information Technology Communication
MFMA	Municipal Financial Management Act
MILE	eThekwin Municipal Institute of Learning
PSSCMR	Public Sector Supply Chain Management Review
SIGMA	Support for Improvement in Governance and Management
SEDA	Small Enterprise Development Agency
SMME	Small Medium and Micro Enterprise
TAM	Technology Acceptance Model
UKZN	University of Kwa-Zulu Natal
VoIP	Voice-over Internet Protocol

ABSTRACT

The South African public-sector procurement system has a good legal framework based on Section 217 of The Constitution of the Republic of South Africa (1996) aimed at rectifying the imbalances of the past. The laws and regulations are in place, but the challenge is human interference, which has seen political office bearers often extending their power to influence the work of the supply chain management officials resulting in allegations of collusion and corruption.

The purpose of the study was to explore and describe the views of SMME owners following the adoption of e-procurement system by the eThekweni Municipality, in order to determine the influence that the system might have had on SMME owners' business relationships with the Municipality. A qualitative, descriptive and explorative study was employed to collect data from eight participants, using semi-structured interviews. Data was analysed using thematic content analysis.

Four themes emerged from data as follows (i) English as a Business language and the importance of SMME owners' level of education (ii) The importance of access to computer technology with internet for the utilization of the Supplier Self-Service System (iii) The importance of computer skills for SMME owners and (iv) The legality of e-procurement system transactions.

It is recommended that the Municipality should consider using both English and IsiZulu in its e-procurement system based on the extent to which the IsiZulu language is spoken and understood within the eThekweni Municipal boundaries.

TABLE OF CONTENTS

CHAPTER 1: Introduction and Overview of the study	1
1.1 Chapter Introduction	1
1.2 Background	1
1.3 Procurement	3
1.3.1 Public Procurement	3
1.3.2 Public e-Procurement system	4
1.3.2.1. Advantages of public e-procurement system	5
1.3.2.2. Disadvantages of public e-procurement	6
1.4. The purpose of e-procurement system and objectives of the study	7
1.5. Key research questions linked to the objectivesstudy	7
1.6. The significance of the study	8
1.7. Preliminary literature review	8
1.7.2. African literature on the e-procurement system	8
1.7.3. Global Literature	11
1.8. The research problem	12
1.9. Theoretical framework	12
1.9.2. Type of research	13
1.9.3. Population	14
1.9.4. Sampling	14
1.9.4.1. Sample size	14
1.9.5 Data collection	15
1.10. Data Analysis	15
1.11. Chapter Summary	16
2.1. Chapter Introduction	17
2.3. Factors affecting the adoption of e-procurement system	18
2.4. Advantages of and barriers to the adoption of e-procurement system	24
2.5. Gaps in the body of knowledge	32

2.6. Theoretical Framework	32
2.7. Chapter Summary	35
Chapter three: Research Methodology	36
3.1. Chapter Introduction	36
3.1.1. Study design	36
3.1. Research Setting	37
3.2. Study population	38
3.3. Sampling method	38
3.3.1. Inclusion criteria	39
3.3.2. Exclusion criteria	39
3.3.3 Sample size	40
3.4 Recruitment of research participants	40
3.5 Pilot Study	41
3.6 Data collection process	41
3.7 Ethical considerations (EC)	42
3.7.1 Voluntary participation and harmlessness	42
3.7.2 Anonymity and confidentiality	43
3.7.3 Beneficence and non-maleficence	43
3.7.4 Justice	43
3.7.5 Risk and Benefit	44
3.8 Chapter Summary	44
Chapter 4: Data Analysis	45
4.1 Chapter Introduction	45
4.2 Data Management	45
4.3 Data analysis	46
4.4 Data analysis of this Study	49
4.4.1. Demographic data analysis	49
4.4.2 Findings	50

4.4.3. Scientific rigor of the Study	55
4.4.3.1. Credibility	55
4.4.3.2. Conformability	56
4.4.3.3. Dependability	56
4.4.3.4. Transferability	57
4.5. Chapter Summary	57
Chapter 5: Discussion of findings, conclusion and recommendations	58
5.1. . Chapter Introduction	58
5.2 The sample	58
5.3English as a business language and the importance of SMME owners’ level of education	58
5.4 The importance of access to computers, technology and the internet	60
5.5 The importance of computer skills for SMME owners	61
5.6 The legality of e-procurement system transactions	62
5.7 Conclusions drawn for the study	62
5.9 Recommendations	64
5.10	
Future research	65
5.11Chapter Summary	65
References	66

CHAPTER 1: Introduction and Overview of the study

1.1 Chapter Introduction

This study sought to explore and describe the views of the Small Medium and Micro Enterprises (SMME) owners doing business with the eThekweni Municipality following the adoption of e-procurement. The study investigated the views of SMME owners using e-procurement, based on five aspects which are as follows: English being the language used in the eThekweni Municipality e-procurement system; the influence of SMME owners' levels of education on e-procurement; the accessibility of free or low-cost reliable computer technology with internet; the computer skills levels of SMME owners; and the legal framework safeguarding the legality of transactions entered into in the use of e-procurement.

This study is made up of five chapters which are as follows:

Chapter 1 discusses the research proposal and the overall study plan;

Chapter 2 deals with the literature review;

Chapter 3 deals with the research methodology;

Chapter 4 which deals with data analysis; and

Chapter 5 which deals with discussion of findings, recommendations and the conclusion.

This introductory chapter discusses the background of the study, defines procurement, and public e-procurement system with its advantages and disadvantages, explains the purpose and objectives of the study, describes key questions pertaining to the research, explains the significance of the study, provides a preliminary literature review, defines the research problem and key objectives and it explains the research methodology followed.

1.2 Background

The eThekweni Municipality introduced an e-procurement system called the Supplier Self-Service System (SSS) in 2011 and it was implemented in 2013. The system transformed the way in which the eThekweni Municipality procures goods

and services from SMME owners from a paper-based bidding to an online bidding system. According to the e-procurement system SMME owners must register and log into the online-based system to access requisitions of goods and services that are being advertised by the Municipality and bid without submitting bidding documents to the Municipality offices. The only papers they submit are the forms which are necessary for registration into the eThekwini Municipality data base. The adoption of e-procurement system by the eThekwini Municipality meant that SMME owners had to adapt to changes in the bidding process.

According to the eThekwini Municipality Annual Report of 2012 the e-procurement system's aims and objectives are: to have equitable, transparent, and fair supply chain processes where all businesses of service providers will have the same opportunities through automatic rotation without interference from officials. The Report also adds that the system provides a cost-effective, reliable system of acquiring goods and services. How does the system work? The buyer uploads the goods and services required by the Municipality into the Supplier Self-Service System and the SMME owners can then log into the system to view what has been loaded and can, if appropriate, make a bid. The system does the following procurement functions: it deals with management of bids, which includes publishing of bids, gathering of bids with the option of republishing; conducting the automatic selection of the supplier(s) with the best functional bid; and converting requisitions into orders and sending them to the approved supplier(s).

The eThekwini Municipality has listed the following as direct benefits from their e-procurement system: The system guarantees accuracy of bids specification and pricing; provides more security protocol to suppliers as there is less human contact; is easier and faster to use and therefore reduces procurement time; and it provides suppliers with recorded tracking in terms of order information and accounts information.

By the same token the eThekwini Municipality Report of 2012 acknowledges the fact that the eThekwini Municipality is made up of various different community types. Some are in the deep rural areas, some are semi-rural whilst others consist of formal townships and urban communities which have different unique

characteristics, different needs, different access to Municipal facilities and different access to unreliable computer and internet connectivity. This over-view is supported by the Statistics South African Census 2011 that reported that the population of the eThekweni Municipality is sitting at more than 3, 4 million people. These 3.4 million are scattered over the areas described above. The difference in population clusters makes access to reliable, free or affordable Information technology infrastructure unequal, the levels of education are different amongst the different population groupings, and skill levels to operate computers vary widely. This study therefore sought to explore and describe in-depth views of SMME owners based on this brief background.

1.3 Procurement

Procurement involves acquiring and sourcing of goods and services for the realisation of an organisation's objectives. According to Chartered institute of Purchasing and Supply (CIPS) (2007:5) procurement is the business management function that ensures identification, sourcing, access and management of external resources that an organisation needs or may need to fulfil its strategic objectives.

1.3.1 Public Procurement

According to Odhiambo and Kamau (2003:10) public procurement is broadly defined as purchasing, hiring or obtaining by any contractual means, goods and construction works, and services by the public sector. A new public procurement system in South Africa was introduced in 1994 as a tool to assist in transformation, which took into consideration inclusion of groups which were previously side-lined due to the unfair policies of the former regime. According to Badenhorst-Weiss (2011:242) public procurement in South Africa has been granted a constitutional status and is recognised as a means of addressing past discriminatory policies and practices. Section 217 of the Constitution of the Republic of South Africa of 1996 stipulates that when government contracts for goods and services, it must do so in a way which is fair, equitable, transparent, competitive and cost-effective. Public procurement is the Government's process of sourcing and acquiring material goods and services from the private sector for the realisation of its goal of delivering quality services to its citizens.

1.3.2 Public e-Procurement system

Public e-procurement system is an aspect of e-governance which solely deals with acquiring and purchasing of materials, goods and services from private companies using an electronic process with the main aim of enhancing equality, fairness, transparency as well as cost benefits for the public entities. Neupane, Soar, Vaidya & Yong (2011:360) states that public e-procurement system has been defined as the use of Information and Communication Technology (ITC) such as the internet/web-based systems by the governments in conducting their procurement relationship with bidders for the acquisition of goods, works, services and consulting services required by the public sectors.

Public e-procurement system is the tool to deal with the challenges which are generally experienced by many if not all government entities. According to the National Treasury's 2015 Public Sector Supply Chain Management Review (PSSCMR) (2015: 4) there is a lack of clarity about the roles and responsibilities of supply chain management technical staff within the procurement process; the political office bearers create the scope for interferences with the procurement process thus increasing corruption. These challenges lead to the allegations and instances of corruption. The National Treasury's PSSCMR (2015) further mentions that the public sector underestimates the importance of supplier management. This is evident in higher prices paid for the goods and services, contracts that favour certain suppliers, collusion, unethical behaviour, non-performance and poor quality. According to Laryea (2014:1) the use of the e-procurement system is increasing in South African despite the associated barriers such as lack of computer skills, lack of access to reliable computers, and lack of direct contact relationships. However, the extent of barriers to, and prospects of e-procurement system uptake in the South African context are not well articulated. E-procurement system was adopted by the eThekweni Municipality to address the above challenges. However, the way eThekweni Municipality e-procurement system influences the business livelihood for Small Medium and Micro Enterprises (SMMEs) is unknown.

1.3.2.1. Advantages of public e-procurement system

Organisations that have introduced e-procurement system have enjoyed advantages that range from reduced procurement costs, reduced lead time and faster delivery of services to the citizenry, less human interference, auditable track of transactions, and promotion of fair competition and equity. Neupane et al., (2013) listed the following as advantages of e-procurement system within an organisation:

- E-procurement system reduces human interaction in bidding for goods, works and services, decreasing corruption significantly, and internal efficiency increases in government and other public entities;
- From the e-procurement system, the government can monitor all the work and service on offer more easily and efficiently;
- E-procurement system increases transparency in works and services and it promotes better interaction between suppliers, vendors and citizens through the online system; and
- E-procurement system reduces procurement costs; it is faster to send documents electronically as compared to the traditional paper-based methods.

In addition, Mgidlana (2014) listed the following as advantages of implementing e-procurement system in an organisation:

- E-procurement system eliminates data capturing errors and improves reliability of information;
- E-procurement system provides better access to real time information concerning the suppliers which, in turn improves accuracy in decision making.
- E-procurement system reduces lead time of the delivery of goods, services and work because more work is focused on service delivery rather than on procurement.

Similarly, Corsi (2006) remarks that e-procurement system programs result in an improvement of labour productivity in the public sector and, as a consequence, contribute to a number of intermediate outcomes which include better services, cost savings, time savings and transparency.

Support for Improvement in Governance and Management (SIGMA) Brief 17, a European Union Document (2012) states that the use of e-procurement systems and processes can result in a number of advantages including: reduced administrative cost of individual procurements; streamlined procurement procedures; faster procurement procedures; increased transparency by providing information about individual tender opportunities and also providing a clearer cross-border competition by reducing barriers presented by paper-based procurement processes; supporting the development of centralised procurement administration, resulting in the potential reduction in costly procurement back-office functions and taking advantage of economies of scale in the procurement administration; wider administrative modernisation and simplification, encouraging the integration of various administrative processes as well as the diffusion of information technology solutions within and by government and society more generally.

1.3.2.2. Disadvantages of public e-procurement

Laryea and Ibem (2014) list barriers to efficiently implementing e-procurement system in a South Africa context as follows:

- There is no proper legal framework which guides contracts emanating from e-procurement, legality of an e-procurement system contract becomes questionable;
- There is lack of a uniform approach by government to the e-procurement system by different government entities, and there is no widely accepted e-procurement system software solution;
- There is a massive deficiency of access to Internet and Information Computer Technology in South Africa. Some groups may feel discriminated against, as e-procurement system is seen as inaccessible contrary to the principles in the Constitution that require fair, transparent, accessible, cost effective procurement; and
- There is lack of technical expertise from suppliers and vendors. Most of them lack an understanding of how the systems work.

The above clearly indicates that there are benefits and shortcomings associated with the adoption of e-procurement system in public sector.

1.4. The purpose of e-procurement system and objectives of the study

The purpose of the adoption of e-procurement system by the eThekwini Municipality was to promote a fair, transparent, and equitable supply chain process. The views regarding the influence of the adoption of e-procurement system on SMMEs are relatively unknown. The objective of the study, therefore, was to explore and describe the views of SMME owners following the adoption of e-procurement system by the eThekwini Municipality. The purpose was also to determine the influence that the system might have had on SMME owners' business relationships with the Municipality.

The objectives of the study were as follows:

- To explore and describe the views of SMME owners regarding the language used in the e-procurement system documents of the eThekwini Municipality;
- To determine and describe the views of the SMME owners regarding the extent to which their level of education influences the efficient use of the e-procurement system;
- To explore and define the views of SMME owners regarding the accessibility of information technology which includes free/ low cost internet in their utilisation of the e-procurement system of the eThekwini Municipality;
- To discover and describe the views of SMME owners regarding the computer skills required to utilise the e-procurement system; and
- To explore and define views of SMME owners regarding the legislation and contractual obligations under which the e-procurement system by the eThekwini Municipality is guided.

1.5. Key research questions linked to the study objectives

The key questions for the research are as follows:

- What are the views of SMME owners on the language used in the eThekwini Municipality e-procurement system?
- What are the views of SMME owners on the importance of education in the of eThekwini Municipality e-procurement system?

- What are the views of SMME owners on the accessibility of free or affordable information technology infrastructure with internet in order to utilise eThekweni Municipality procurement system?
- What are the views of SMME owners on the importance of having computer skills in order to utilise e-procurement system?
- What are the views of SMMEs owners on the legality of e-procurement system transactions?

1.6. The significance of the study

The significance of the study is that it could produce findings that may assist the eThekweni Municipality to fill gaps in the existing policy and to improve the implementation of e-procurement. The findings may also assist in furthering the adoption and implementation of e-procurement system by other municipalities and other government entities in KwaZulu Natal (KZN) and in South Africa generally. Literature reviewed during the development of the proposal revealed a paucity in research on public e-procurement system in South Africa. The findings of this exploratory study may contribute towards closing this gap and may also prompt further research into the e-procurement system for other municipalities in KZN, South Africa and on the African continent.

1.7. Preliminary literature review

Public e-procurement system is a new phenomenon in the South African public sector, hence there is limited literature available. The following presents literature forming the body of knowledge reviewed in this study. This literature review is presented in two sections: The African literature and the global literature.

1.7.2. African literature on the e-procurement system

Mgidlana (2014) investigated factors affecting the adoption of e-procurement system technologies from the supplier perspective. Mgidlana (2014), in his study, investigated cost effectiveness as a benefit of implementation of e-procurement system for both private and public sectors. It also touched on challenges that are unique to South Africa. Mgidlana's (2014) study found that e-procurement system assists organisations to reduce fraudulent orders due to the reduction of human

contact in the procurement process; e-procurement system reduces bidding costs for both suppliers and the organisations because quotations are done online. Mdiglana (2014) further maintains that e-procurement system improves productivity.

Mgidlana (2014) study found that the success of the implementation of e-procurement system depends on ensuring that there is the continuous training of suppliers on how to utilise e-procurement system and that the language barrier, as a result of the low level of literacy amongst South Africans, was making it difficult to implement e-procurement system successfully. Mgidlana (2014) study further found that there is limited access to reliable Information technology infrastructure.

In 2003, Jooste investigated the framework for the implementation of e-procurement system in South Africa within the private sector. Jooste (2003) reported the advantages of e-procurement system as being the improved procurement process, provision of the uninterrupted flow of materials, and the cost reduction in the process of procurement. Although the focus of Jooste's (2003) study was on the private sector, its objectives are similar to the benefits of e-procurement system for the public sector as highlighted in the eThekweni Municipality Annual Report of (2012).

Leryea (2014) investigated the barriers and prospects of e-procurement system in the South African Construction Industry, the study found that information technology infrastructure is unreliable and hard to access, there is a lack of skills, and there is a concern over the security of data, potential inequality access to information technology, lack of knowledge on e-procurement system and legal issues.

On the other hand, Badenhorst- Weiss (2011) identified the challenges such as lack of skills on the part of Supply Chain Management Officials, collusion and corruption, lack of uniformity in procurement amongst government entities in South Africa and concluded that not all municipalities opted to adopt e-procurement. In a paper, *The Anti- Corruption Strategies in the South African Public Sector - Perspectives on the Contributions of Complexity Thinking and IC*, Habtemicheal (2009) identified e-procurement system as one of the strategies or systems to combat corruption in public institutions.

Otieno, Muthoni & Mungai (2013) investigated the factors affecting the use of e-procurement system in Kisii Town, the study findings were that the use of internet and a technology-based system in procurement has led to lower procurement costs and efficiency in the procurement process. The study further found that these benefits normally drive managers of firms to invest in e-procurement system thereby realising cost saving, improved quality, better relationship with suppliers and ultimately the registering of high profitability. Otieno *et al*, (2013) also found that e-procurement system capability is an important determinant in the use of e-procurement.

Amin's (2012) study of electronic procurement and organisational performance among commercial state corporations found that the Commercial State Corporation in Kenya has successfully implemented e-procurement system but most of the other procurement processes were still handled in the traditional manual way. These activities included advertising of tenders and short-listing of suppliers. Amin (2012) also found that the specification and briefing meetings were presented face-to-face rather than through a Web-based meeting format such as Voice-over Internet Protocol (VoIP).

Chapiro (2009) in his dissertation entitled, "The impact of e-procurement system on strategic sourcing - a Case Study: CBZ Bank Limited, Zimbabwe" also looks at the advantages and disadvantages of the adoption of e-procurement system by a public entity.

Aikins, Asibey, Agyemang-Duah, Adjei, Broni, & Christian (2014) studied e-procurement system an emerging supply chain management system in the hospitality industry in Kumasi and found that the level of demand can clearly be seen, procurement processes are reduced, wastage is dramatically reduced, and cost of administration and inventory management is reduced.

The challenges found were that implementation of e-procurement system has turned out to be much more problematic and challenging than expected. Aikins *et al*, (2014) found that implementing e-procurement system will not automatically lead to higher

levels of efficiency or contract and system compliance. Aikins *et al*, (2014) also found that, given the short history of e-procurement system initiative in the public sector, reliable performance and outcome statistics have yet to be produced.

1.7.3. Global Literature

SIGMA (2011) investigated the benefits and challenges of the implementation of the e-procurement system within the European Union (EU). From this study the findings clearly show that e-procurement system challenges in Europe are very different to the challenges in Africa. The issue of access to IT might seem to be a challenge in Africa but it is not rated as the issue for the EU countries. The main challenge of e-procurement system is uniformity, the findings found that there are numerous e-procurement system software programs which makes it difficult to standardise.

Vaidya, Sajeew and Callender (2006) studied critical factors that influence e-procurement system implementation success in the public sector. The finding was that e-procurement system involves three areas necessary for implementation: organisation and management, practices and processes, and systems and technology.

Nuepane *et al.*, (2013) investigated the role of e-procurement system technology to reduce corruption in government procurement. The findings were that e-procurement system can centralise data in order to improve audit and analysis; e-procurement system reduces direct human interaction in the bidding and other processes, corruption is reduced, and efficiency is increased in governance; e-procurement system promotes clear monitoring and evaluation; the online bidding system automatically reduces the cartel, collusion and riggings among the bidders.

Kilvik and Bakland (2015) studied e-procurement system implementation in the public sector and found that end-user involvement, support and communication, and end-user training were all used, together with self- learning where the focus was on user's IT experience. This study focused on the suppliers as end-users of the e-procurement system. It also investigated how the systems are introduced to the end-users.

Corsi (2006) concluded that e-procurement system programs result in an improvement in labour productivity in the public sector and, consequently, contribute to a number of intermediate outcomes. The paper draws attention to better services, cost savings, time savings and transparency. Corsi (2006) further claims that users are resistant to change. They believe that e-procurement system will make procurement difficult, and that there is a lack of a regulatory framework guiding e-procurement.

1.8. The research problem

As mentioned above, the eThekweni Municipality is made up of geographically dispersed communities totalling some 3 to 4 million people living in mixed dwellings. The eThekweni Municipality Spatial Development Framework (EMSDF) classifies dwellings as urban, semi-urban and non-urban. This means that some of the population is in the city, suburbs and townships, some are in the semi-rural, and some are in the rural areas.

Kramer (2016) states that South Africa's internet penetration as a percentage of the population is only 47% as compared to 95% of population of developed countries. This 47% is mostly to be found in the urban areas with semi and non-urban areas lagging behind. The difference in living areas also means that there are differences in terms of the population's education levels. This is supported by the eThekweni Municipality Integrated Development Program Report (2018: 63) which states that the well-developed core of the municipality has higher levels of education while the townships and rural areas have lower levels. This also relates to skills to operate computers. Computer skills are higher in the urban areas than in the rural areas making e-procurement system a challenge for rural-based dwellers. This points to the limitations in public e-procurement. Key questions that were asked are presented in section 1.5.

1.9. Theoretical framework

A theory is a set of constructs and variables joined together to unpack a research phenomenon. Bhattacharjee (2012) defines a theory as a set of systematically interrelated constructs and propositions intended to explain and predict a

phenomenon or behaviour of interest, within certain boundaries, conditions and assumptions. Sekaran (2010) confirms that a theoretical framework presents researchers with beliefs on how certain phenomena (or variables or concepts) are related to each other (a model) and with an explanation of why the researcher believes that these variables are associated with each other.

This study is guided by the Technology Acceptance Model (TAM) which is the theoretical model that investigates the acceptance or non-acceptance of the new information technological system. It is the theoretical model that is widely used by researchers when investigating the introduction and adoption of new technology.

Research design

The design stage of the research involves explaining the research type utilised, the population, the sampling technique and the sample, data collection tools and the type of data to be collected.

1.9.2. Type of research

This study follows an exploratory and descriptive qualitative research design. Qualitative research implies collection and analysis of data which can be less quantified. According to Wiid (2009) qualitative study is the collection, analysis and interpretation of data that cannot not be meaningfully quantified, that is summarised in the form of numbers.

Exploratory research is the research that deals with the investigation of a phenomenon where little or no knowledge about it exists. According to Bhathacherjee (2012) exploratory research is often conducted in the new areas of enquiry where goals of the research are: (1) to scope out the magnitude or extent of the particular phenomenon, problem or behaviour, (2) to generate initial ideas (or hunches) about that phenomenon, or (3) to generate some more extensive study regarding that phenomenon.

E-procurement system is a relatively new phenomenon in the South African Public Sector in general and to the eThekweni Municipality in particular. The research investigates the behaviour of the SMME owners towards the new phenomenon of e-

procurement system adopted by the eThekweni Municipality. The above qualifies this research to be considered as an exploratory qualitative research study. This research makes careful observations and detailed documentation of the views of SMME owners following the adoption of e-procurement system by the eThekweni Municipality, and this involves descriptive research. Bhathacherjee (2012) defines a descriptive research as being directed towards making careful observations and detailed documentation of the phenomenon of interest.

1.9.3. Population

The population in the research is the group from which a sample is selected. It must be directly involved with the phenomenon the researcher wishes to investigate. Parahoo (1997) defines population as the total number of units from which data can be collected. The population of the study is made up of all SMME owners who are utilising the e-procurement system Supplier Self-Service System when doing business with the eThekweni Municipality.

1.9.4. Sampling

The research utilised purposive sampling because the characteristic of the sample is well defined as SMME owners that are doing business with the eThekweni Municipality through the utilisation of e-procurement. Marse (2004) states that purposive sampling in a qualitative research is a deliberate seeking out of participants with particular characteristics according the needs of developing analysis, and emerging theory. Teddie and Yu (2007) refer to the purposive sampling or qualitative sampling involving the selection of certain units or cases based on a specific purpose rather than randomly.

1.9.4.1. Sample size

The sample size for the study was eight participants. The smaller sample is acceptable as the aim of this research is not to generalise but to gain in-depth information regarding the SMME owners' perspectives on e-procurement system. Creswell & Clark (2011) state that qualitative researchers identify and recruit a small number that will provide in-depth information regarding a phenomenon being studied. Baker (2012) states that a small number of cases, or subjects may be

extremely valuable and represent adequate numbers for a research project. Between six and a dozen, may offer insights into purposive research. In the qualitative research a small sample size may be acceptable, taking into consideration the amount of data that the researcher could gain from the interviews, and also because the idea is not to generalise the findings but to have an in-depth understanding of the phenomenon being investigated.

1.9.5. Data collection

Semi-structured interviews were used to collect data and the interview questions were devised in line with the research objectives. The individual interviews were conducted in English though there was an option for the use of IsiZulu for SMME owners who are not English speakers. The transcriptions were to be undertaken by the interviewer at the end of the data collection. Field notes were taken during the interview. All participants opted to be interviewed in English. The interviews were conducted at the eThekweni Municipality Materials offices. This is where the SMME owners meet on specific days. Data was transcribed within 48 hours of collection, and kept in a word document saved in three different systems for back up.

1.10. Data Analysis

Data analysis involves the examination of data collected from the sample to provide answers to the research questions. Ghauri (2002) defines data analysis as a process of bringing order, structure and meaning to the mass of collected data. Coldwell (2004) confirms that the purpose of data analysis is to generate meaning from the collected raw data. This is a qualitative research study, and that dictated the use of a Thematic and Content Analysis that involved grouping together data with similarities into themes to produce findings. Thematic and content analysis allows the researcher to identify themes that arise from data collected. Alhojailan (2012) defines thematic content analysis as a qualitative data analysis that is used to analyse classifications and present themes (patterns) that relate to data. According to Anderson thematic content analysis is a descriptive presentation of qualitative data.

1.11. Chapter Summary

The aim of this chapter was to provide an overview of the study, to demonstrate the need for the study and to clarify the process of the research followed from the first chapter until it was concluded.

Chapter 2

2.1. Chapter Introduction

This chapter presents reviewed literature from studies which investigated the adoption and implementation of e-procurement system in the public sector on the African continent and, to a limited extent, globally, by focusing on factors affecting the adoption of e-procurement, advantages of e-procurement system adoption as well as barriers hampering the adoption of e-procurement. This chapter further illustrated the theoretical framework which formed base for the study.

2.2. Definition of literature review

Literature review is an integral part of the research process and it should make a valuable contribution to almost every step. According to Kumar, (2011) literature review provides a theoretical background to the study and it helps establish the links between what the researcher examined and what has already been studied and published. It enables the researcher to show that the researcher's findings have contributed to the existing body of knowledge.

According to Bhattacharjee (2012) the purpose of the literature review is to survey the current state of knowledge in the area of enquiry, identify authors, articles and theories, and findings in that area, and identify gaps in the knowledge area. The goals of literature review are to establish familiarity with the body of knowledge and establish credibility; show the path of the prior research and how a current research project is linked to it; integrate and summarize what is known in the area; and learn from others and develop new ideas.

For this study, a context literature review was used. According to Neuman (2014) context literature review is a common type of review in which the author links a specific study to a larger body of knowledge. It often appears at the beginning of a research report and introduces the study by situating it within a broader framework and showing how it continues to build on a developing line of thought or study.

2.3. Factors affecting the adoption of e-procurement system

Several studies on factors affecting suppliers due to the adoption of e-procurement system have been conducted in South Africa. For instance, Mgidlana (2014), in his study focused on plumbing suppliers' perspectives in Pretoria that challenged the notion that an organization gained an advantage by adopting e-procurement system technologies to increase volumes. The study pointed out that this was not supported by data. However, the existence of power imbalances with major suppliers and manufacturers in the plumbing industry in Pretoria diminished the possibility of customers exerting pressure on suppliers or manufacturers to adopt e-procurement system technologies.

The above was further supported by Gardinal (2010) in the paper on the Model to measure the impact of e-procurement system on organizational performance where four critical factors were identified as important if a public organisation needs to adopt e-procurement. These are the technological availability for the e-procurement system requirements; a well-defined procurement process upon which the technology will be based; and the people. It is imperative to gain the buy-in of procurement officials when an organization intends to adopt e-procurement.

Gardinal (2010) also stressed the importance of studying the environment when embarking on adopting an e-procurement system. The environment included the political will to accept the adoption of e-procurement. In the case of this study the political will would be defined by the aim of procurement by the state which was to have an inclusive procurement system which will help the country address the imbalances of the past as per Section 217 of the Constitution of the Republic of South Africa sited in chapter one; the type of suppliers and contractors the organization finds itself dealing with, their level of education and their IT awareness. He further identified six critical factors which can be utilized by the public institutions to measure the success or otherwise of the adoption of e-procurement system.

These were:

- a) efficiency, which means that after the adoption of e-procurement system the procurement process must become shorter with less human errors as compared to the traditional process;
- b) effectiveness which means that public organizations can deliver quality services to the citizenry quicker and more effectively;
- c) reduction of administrative costs because e-procurement system means less paperwork;
- d) widening the competitive spectrum of suppliers and contractor to gain value for money;
- e) transparency, by following a well-defined process; and
- f) monitoring, evaluation and the provision of real time information at any given time for the purposes of auditing.

Another study which was relevant to this research was done by Koech in 2016. Koech studied factors influencing the adoption of e-procurement system in Kenya's public sector. The study focused on four main factors of e-procurement system adoption which are:

- a) legal issues of e-procurement;
- b) resistance to change towards e-procurement;
- c) IT issues on adoption of e-procurement; and
- d) security of transactions.

Keoch (2016) found that the legality of e-procurement system transactions is questionable in terms of regulation. According to data from interviews, it is difficult to have standard regulations for such transactions. It was found through such data that employees of the procurement units are reluctant to accept e-procurement system sighting fear that it would replace them and cause job losses. The study also found that it was extremely difficult for the older generation employees to utilize e-procurement system as they are not computer literate and that more training was required. It was also revealed that security of information on the internet was a major concern.

This is also supported by Ruiker (2006) who stated that one of the challenges in developing any e-tendering system is in converting the functionality of the traditional paper-based system to an electronic system while maintaining legal compliance.

Koech's (2016) study concluded that the legality and enforceability of contracts entered into through e-procurement system was never tested and procurement practitioners were unsure if they would succeed should a case involving an e-procurement system were to stand in a court of law; that there is a reluctance to accept technological changes within the Kenyan public sector employees, the threat of technology replacing employment is a reality and that the security of the organization's IT infrastructure will determine the security and safety of their e-procurement system.

He further recommended that cultural changes should be encouraged before the adoption of e-procurement system as with any other technological system, the government must come up with clear legislation to regulate e-procurement system contracts, and the organizations will need to invest in IT security.

Thiga (2016) conducted a study of factors influencing the adoption of e-procurement system in Kenya. The survey was aimed at being relevant to several governments. Thiga's research focused on the influence of top management on the adoption of e-procurement, e-security, acceptance by users, as well as staff perceptions. It was discovered that top managers were the main drivers of the adoption of e-procurement system in many public-sector organizations.

The buy-in by senior managers is of the utmost importance for the successful adoption and implementation of e-procurement. However, it was found that e-security was a major concern due to lack of uniformity in the IT systems employed at the adoption of e-procurement. Traditional staff perceived the adoption of e-procurement system as a process to replace them.

The last factor identified by Thiga (2016) was the issue of acceptance by the users, contractors and suppliers. The research found that users were keen to use e-

procurement system though they had reservations regarding the safety of the information and the legality of contracts entered into through e-procurement. The study concluded that the support from top management, proper e-security, acceptance by users as well as staff training influence a successful adoption of e-procurement system within public sector organizations.

It then recommended that top managers with Kenyan parastatals must set proper straight-forward goals for the adoption of e-procurement, e-security must be a major priority and it must be able to authenticate the users and be able to eliminate threats. The staff must be trained to accept the e-procurement system as a good change and not as a tool to replace them.

Orina (2013) conducted a study of e-procurement system readiness factors in Kenya's public sector. The main objective was to determine factors that influenced e-procurement system readiness in this sector. The study focused on eight factors which determined e-procurement system in Kenya's public sector. These factors were: technology, the organisation's financial status, leadership and integrity, the legal framework, employee attitudes, procurement policy, procurement law, and government support.

Orina (2013) found that procurement policy, procurement law, the legal framework, technology as well as employee attitude had a direct influence on the readiness or otherwise of organisations to accept e-procurement system. That study further found that factors such as organisation's finances, leadership and integrity did not have a direct influence on e-procurement system readiness. Orina (2013) concluded that the factors such as technology and procurement professionals were the most essential for the public sector to be ready for the adoption of e-procurement system. The study also concluded that staff skills, resistance to change and lack of enthusiasm, were factors at the centre of e-procurement system readiness in the Kenyan public sector. The study thereafter recommended that training of procurement staff be prioritised, and that the Public-Sector Information Technology infrastructure should be improved.

Bilali (2015) conducted a case study of Garissa county focusing on determining organizational, environmental and technical factors influencing the adoption of e-procurement. His findings revealed that top managers' support, the size of the organisation, skills and knowledge were very important for the adoption of e-procurement system, as were government policies and regulations. The findings further indicated that a properly managed information technology infrastructure was a necessity for the adoption of e-procurement.

Bilali (2015) concluded that when there is a commitment and willingness from top management with regard to the adoption of e-procurement system and a good working relationship with the national government, the adoption of e-procurement system can be easy. The study further concluded that the adoption of e-procurement system depended on the expertise of procurement employees and that young employees made the adoption easy because there is less resistance to technology.

Chebii (2015) studied the determinants of a successful implementation of e-procurement system in the public institutions in Kenya. Government support, technology and supplier responsiveness were found to be determinants of a successful implementation of e-procurement. He further identified that technology is the key determinant of the successful implementation of e-procurement.

From the findings, Chebii (2015) made the following recommendations:

1. the government should computerise most of its functions to create an environment conducive to the adoption and implementation of e-procurement;
2. government must make available funds for the training of employees as part of enhancing support for the adoption and implementation of the successful e-procurement; and suppliers and contractors should be encouraged to utilise e-procurement system sighting advantages which can be derived from such a process.

The study by Amin in 2012 investigated the use of e-procurement system and organisational performance among the commercial State Corporations in Kenya. The objectives of the study were to establish the extent to which the State Corporations have adopted e-procurement, and to establish the effect on

performance of Kenya State Corporations that have adopted e-procurement system and, finally, to establish the extent to which Kenyan State Corporations have adopted e-procurement system (Amin, 2012).

The findings revealed that most of the Kenyan State Corporations have adopted and implemented an e-procurement system but through the study it was also revealed that most of them have recently started using the system though they have had it for more than 5 years. It was also found through the data that the adoption was fairly new amongst Kenyan State corporations. The findings further revealed that though e-procurement system was already adopted by many State corporations, it was clear that most procurement functions were still performed through traditional paper-based methods. For example, most Kenyan State Corporations still advertised proposals manually; many procurement processes were still conducted through a manual traditional paper-based method.

On the positive side Amin's (2012) study showed that the e-procurement system has enabled Kenyan State corporations to provide real time information for evaluation, monitoring and auditing. Kenyan State Corporations, through the adoption of e-procurement, have gained an increase in transparency on procurement transactions and contracts. Collusion amongst cases which included the involvement of procurement staff has decreased dramatically as a direct result of the adoption of e-procurement.

The study concluded that many employees still needed to be trained to be able to accept and utilise the e-procurement systems productively. The study concluded that many employees still needed to be trained to be able to accept and utilise the e-procurement systems productively. The literature reviewed establishes, that Kenya is leading on the African continent with regard to the e-procurement system in general and public e-procurement system in particular.

The following is literature about factors affecting adoption of e-procurement system

2.4. Advantages of and barriers to the adoption of e-procurement system

Laryea (2014) studied barriers and prospects of e-procurement system in the South African Construction industry. He discovered that the unreliability of the information technology, uneven access to Information technology infrastructure, security of information, lack of knowledge about e-procurement, legal issues, and cost of the system were barriers. For example, the unreliability of the information technology was found to be the fact that the email was sent, it did not mean that it was received on the other side.

The network infrastructure issues in some areas caused delays due to down time. The unreliability of electricity supply was also reported to have influenced procurement because when systems are down submission deadlines can easily be missed, and thus negatively affecting companies' operations, Laryea (2014).

Despite uneven access to information infrastructure technology, the findings show that issues in relation to that uneven computer access defeat the constitutional proclamation of having a fair, transparent, accessible, and cost-effective procurement process for everyone; poor network access disadvantaged those living in disadvantaged communities and that many emerging contractors who may not have invested in the IT infrastructure could be eliminated from e-procurement, Laryea (2014).

Under security of information findings, it was revealed that important information could be stolen through a plethora of generally available computer scams; information getting to the other side without interference of the third party could not be guaranteed and the use of the computer system open to many bidders could open up the company's computer system to a number of viruses at all times. It was also revealed that when the information of a company was no longer in a closed envelope, it was possible for the buyer to gain access to other bidders' information and to collude with the preferred candidates, Laryea (2014).

Under knowledge about e-procurement system it was found that when only a limited number of people understood how the e-procurement system process works, it was difficult to audit the fairness of the approach. Many emerging contractors were found not to have been exposed to e-procurement. This disadvantaged them in the e-procurement system process. More training was required, Laryea (2014).

Under the legality of e-procurement, it was revealed that it was difficult to e-sign legally binding documents and that this could render documents such as tax clearances to be considered illegitimate and not to be tamperproof. It was found that there was a lack of aggressive legal control to report and handle fraud in the electronic communications, and that a company's important legal documents could be open for public access, Laryea (2014)

Regarding cost related to the adoption of e-procurement, Laryea (2014) found that e-procurement systems available were extremely expensive and that they were not accessible to all in the construction industry.

Laryea' (2014) concluded that although e-procurement system is a fairly new phenomenon within the South African construction industry, as compared to the other countries, it is the most used e-procurement system method that, in small-scale adoption, is used in emails, and access to the static web, Web 2.0 and portals. The advantages or prospects of the e-procurement system pre-awarding stage were that it speeds up the procurement process, costs less compared to traditional methods and it is an easy-to-use e-procurement system tool.

Laryea (2014) recommended that there should be an increased focus on the reliability and access to computer infrastructure in the country to meet world standards and to enhance the use of electronic-based transactions which include e-procurement. He further recommended that e-security and legality of contracts entered into electronically should be standardised and be prioritised and that more training was needed for construction industry companies to gain knowledge of how e-procurement system works.

In 2003 Jooste in Pretoria South Africa wrote a paper highlighting the benefits and challenges of using e-procurement system for both private and public entities.

According to Jooste (2003) e-procurement system allows organisations to access new suppliers and buyers; it provides for an easy exchange of information that, in turn, provides supply chain partners with a ‘dashboard type’ of a view of orders and services performance; Jooste (2003) further stated that e-procurement system reduces the challenge of lost documents and manual tracking of orders. Finally, Jooste (2003) stated that it reduces the administration cost and improves performance of the procurement professional.

Jooste (2003) also highlighted challenges to the implementation of e-procurement system in South Africa. According to Jooste (2003) there is a limited supply base with the industry dominated by a few monopoly companies; government policies and regulations around Black Economics Empower (BEE) and SMMEs owners introduced inexperienced players into procurement management; the country’s information technology infrastructure has not advanced to the level of western counterparts.

Azanlerigu (2015) studied prospects and challenges of e-procurement system in selected public sector public institutions in Ghana. The focus was on the lack of employee competency, inadequate legal framework and inadequate technological infrastructure that are challenges to the adoption of e-procurement. Attention was also given to security of procurement transaction data as a challenge in e-procurement system adoption.

The study found that many employees have no experience in operating e-procurement, and most respondents had not attended any training related to e-procurement system and how it is operated. The study also found that legality of contracts entered into through public e-procurement system had little or no support from Ghanaian laws. The inadequate infrastructure was also a challenge, and this had a negative influence on the adoption of e-procurement. The study also found that the security of transactions in the e-procurement system is inadequate and poses a major challenge to the adoption of e-procurement. Suppliers and contractors seemed not to trust that their companies’ information is safe.

Azanlerigu (2015) concluded that the lack of employee competency is a major challenge that hinders the smooth adoption and operation of e-procurement system

in the Ghanaian public sector. The study further concluded that the legal framework supporting e-procurement system in the Ghanaian Public Sector has not been given enough emphasis. Lack of infrastructure conducive to the adoption of e-procurement system is one of the hindrances to e-procurement system becoming a success in the Ghanaian public sector.

Azanlerigu (2015) study recommended that continuous training of employees on the e-procurement system is a necessity if the adoption of e-procurement system is to be a success. The formal recognition of the e-procurement system process and transactions by the legal system of Ghana is imperative if the adoption of e-procurement system is to succeed. Another recommendation was that the government should focus on improving infrastructure to enable the successful adoption of the public e-procurement system.

Aikin *et al.*, in 2014 studied e-procurement system as an emerging Supply Chain Management System in the hospitality industry in Kumasi, Ghana. The objective of the study was to examine opportunities and challenges in the adoption of an e-procurement system in Kumasi.

The findings of the Aikin's *et al.*, in 2014 study were that the adoption of e-procurement system reduces the time it takes the hospitality industry to acquire goods and services, it reduces the cost of doing business as compared to a traditional paper-based procurement process. The study found that the frequency of interruption of the electricity supply in Kumasi was a challenge to the e-procurement system process. The study also found that the cost of the e-procurement system was a major challenge and resistance to the acceptance of technological change was a challenge to the acceptance of e-procurement system by procurement staff.

The study concluded that e-procurement system had a bright future in Kumasi. Aikin *et al.*, in 2014 recommended that top management should understand this and accept e-procurement system as a means to enter into business transactions. Another recommendation was that it was organisations' responsibility to persuade and propel suppliers and contractors towards accepting e-procurement.

Neupane *et al* (2013) studied the role of public e-procurement system technology to reduce government corruption in fifty countries around the globe. The objective of the study was to establish the role that could be played by the adoption of e-procurement system to reduce corruption in the public procurement process. The key factors of the study were transparency and accountability.

The findings were that most countries' aim in adopting e-procurement system was to have an accountable and transparent government procurement process. Another finding was that governments implement or adopt e-procurement system to gain more openness, and to make procurement information available and accessible to the public. This should, in turn, increase the flow of public information, increase trust and citizenry satisfaction while providing better accountability.

The study also found that e-procurement system can centralise data to provide improved tracking of orders and proper auditing. It can eliminate or, at least, reduce direct human interaction in transactions hence reducing collusion and corruption. It was also noted that government can monitor services and works effectively, efficiently and with ease when using e-procurement system. It was also found that e-procurement system may increase transparency and improve communication channels among government, suppliers/ contractors and the citizenry. The study found that e-procurement system implementation has, in some of the countries, reduced collusion and 'rigging' amongst contractors.

The conclusions drawn by this study were that transparency and accountability are major benefits of the adoption of e-procurement system. Other benefits include increased competition, which in turn reduces the prices to the governments for goods, services, and works. It can improve the quality of goods and services and improve procurement consistency which reduces corruption in government procurement processes. The study also concluded that most countries adopt e-procurement system to improve audits of their Procurement Departments since e-procurement system provides real-time information of all transactions whenever that information is needed.

Assar (2008) studied an empirical evaluation of public e-procurement system platforms in France. The main objective of the study was to describe the functionality and legality of the public e-procurement system in France. The study found that reverse bidding is not always supported in public e-procurement system but obtaining the lowest bidder is always a major objective of the public sector and state entities in France. The study also found that functionalities that are usually available in the private e-procurement system are not properly emphasized in public e-procurement. The study further found that uniformity in the e-Security mechanism has been achieved in the French public e-procurement system sector.

Assar concluded that although public e-procurement system is in place and seemed to have reached uniformity there seems to be a lack of standard operating procedures for the usage of the system. It was also discovered that, even though the conduct of the public contract process is well defined in law, there seems to be no general pattern for the virtualised procurement processes supported by actual electronic platforms. Another conclusion was that the lack of a standard operating procedure was time-consuming for suppliers and contractors as they were expected to register with different public-sector departments and various government entities.

The study recommended that government should strive to have a standardised e-procurement system procedure which will lift a burden from the shoulders of the suppliers and contractors.

In Kenya, Otieno 2013 investigated factors affecting the use of e-procurement system in selected firms in Kisii Town. The study found that e-procurement system capability is an important determinant of the use of e-procurement. This meant that the ability of the system, the procurement employees and users must all be competent to utilize an e-procurement system. According to Otieno (2013) the contribution of the IT system depends on other resources, such as people and investment in associated processes.

Otieno's (2013) study concluded that the value of e-procurement system affects the use of e-procurement system as being the driving force in the use of e-procurement system in terms of time delivery, cost reduction, increased number of suppliers, improved buyer-supplier relationship, and high profitability. The study concluded

that the lack of IT skills with the organization, lack of e-procurement system knowledge, and lack of procurement employees' buy-in had a negative effect on e-procurement system adoption.

Otieno's (2013) recommended that all organizations should optimize the benefits of e-procurement system by increasing the proportion of their budgets for e-procurement system by increasing the number of suppliers and contractors thereby justifying the use of e-procurement. He also recommended that organisations should increase their procurement capacity in terms of IT expertise and IT infrastructure.

Vaidya (2006) studied critical factors that influence e-procurement system implementation success in the public sector in the United State, United Kingdom and Australia. The focus of the study was on determining Critical Success Factors which best support the implementation of e-procurement system initiatives in the public sector. The study focused on end-user uptake and training which is necessary for the buy-in from the employees who will be utilising the system, the supplier adoption which means the e-procurement system acceptance by suppliers, the manner in which the e-procurement system project is managed, systems integration, re-engineering the process, performance management, top management support, change management, e-procurement system implementation strategy, as well as communication standard as the critical success factors necessary for the adoption of e-procurement.

The study found that amongst the pre-determined critical success factors there was no one single factor which was more important than the others; they all carried similar importance. The study also found that successful implementation is more prevalent where great emphasis is placed on the human factor rather than on the technological factor when attempting to implement e-procurement system in the public sector.

The main objective of the study was to determine a number of unique factors critical to the smooth implementation of public e-procurement system and it concluded that the buy-in or acceptance by procurement professionals was extremely important in the successful implementation of e-procurement system in the public sector whilst

the willingness from suppliers to adopt e-procurement system is as important. Support from top management also has a great influence in the successful implementation of public e-procurement system and so has all other critical success factors.

The main recommendation was that emphasis should be put on e-security and legality of transactions and contracts entered into through e-procurement. Another recommendation was that the organisation should ensure top management support to influence and train procurement professional support staff to accept change and to move from traditional paper-based procurement to an electronic version. It was also found to be important that suppliers and contractors understand how e-procurement system could make their businesses profitable through enhanced transparency and accountability.

Corsi (2006), in his paper, that gave an e-procurement system overview, provided the reasons for the adoption of e-procurement system by governments and public entities. He stated that the main reason for the adoption of e-procurement system in government should be to improve productivity of the procurement employees and, as a result, contribute to the best service delivery to the citizenry, lowers procurement costs, creates an environment for an improved and transparent accountable procurement system, and saves time and thus increase efficiency and effectiveness of the public sector.

According to Corsi,(2006) to realize the above, the public sector needs to take into consideration challenges that are often associated with the adoption of e-procurement. The challenges were that suppliers and contractors may be resistant to change due to human nature; employees may feel that the adoption of e-procurement system is aimed at replacing them, so naturally they will not support it. In addition, the laws and regulations may not allow the use of e-procurement system and the level of education may have a direct effect on the e-procurement system adoption. In reality, where the levels of education are low computer skills are lower. The last point of Corsi's (2006) paper has been identified as one of the variables in the theory which this study is based on.

2.5. Gaps in the body of knowledge

The literature brought to light a gap in that there has been limited investigation into the influence of the language used in the adoption and e-procurement system for the parties who would be using the system. This study aimed at gathering the views of SMME owners regarding the language used in e-procurement. The literature reviewed investigated the education and training needs of supply chain practitioners and employees but fell short in looking at the level of education of suppliers as end-users or parties from whom goods and services will be procured. The accessibility of IT systems which includes internet was thoroughly investigated but less so from the point of view of the language facility of the end-users. Another gap that was clearly shown in the literature review was that computer skills of end-users was not given much consideration. It was discovered also from the literature reviewed that there is no uniform legal framework that can ensure the legality of contracts entered into through the e-procurement system process. This study contributed, therefore, to identification of gaps in research identified through a study of the literature reviewed.

2.6. Theoretical Framework

This study is guided by Technology Acceptance Model (TAM) as mention in chapter 1. The T A M was developed by Davies (1989) and is one of the most popular research models to predict use and acceptance of the information systems and technology (Surendran, 2012). The TAM has two factors which are: perceived usefulness and perceived ease of use relevant to computer use behaviour. Davies (1989) defines perceived usefulness as a prospective user's subjective view that using a specific application system will enhance his or her job or life performance. Perceived ease of use may be defined as the degree to which the prospective user expects the use of the targeted system to be free of undue effort.

According to the TAM, perceived ease of use and usefulness are the most important factors determining the use of the system. These two are influenced by external factors which are social, political and cultural. Social factors include language, interpersonal skills, education and other facilitating conditions. Political factors include legislation surrounding the use of the system, and cultural factors include perceived

normal practices. According to Korpeleinen (2011), TAM presents a theoretical model which aims to predict and explain ICT usage behaviour, and what causes the prospective users to accept or reject the use of information technology. This study explore and describe the influence of the adoption of e-procurement system by the eThekwini Municipality on SMME owners.

2.6.1. TAM relevance to this study

The TAM, as a theoretical model, provides strong practical support. The model clearly illustrates the external factors that influence the use of e-procurement system by SMME owners. This study assumes that the acceptance and use of the e-procurement system is influenced by the external factors such as the level of education of SMME owners, the access to free or affordable computer infrastructure, and the skills or lack of skills to operate computers as social factors. The political factor relates to the legal regulations and processes of contracts entered into whilst using e-procurement, and the cultural factors refer to the traditionally accepted quoting and bidding processes. It is from these factors that the SMME owners will calculate the advantages and disadvantages of adopting the e-procurement system by the eThekwini Municipality. The objectives of the study are developed along the factors identified in the TAM.

The following is the diagram that illustrate TAM process:

Source: Davis (1989)

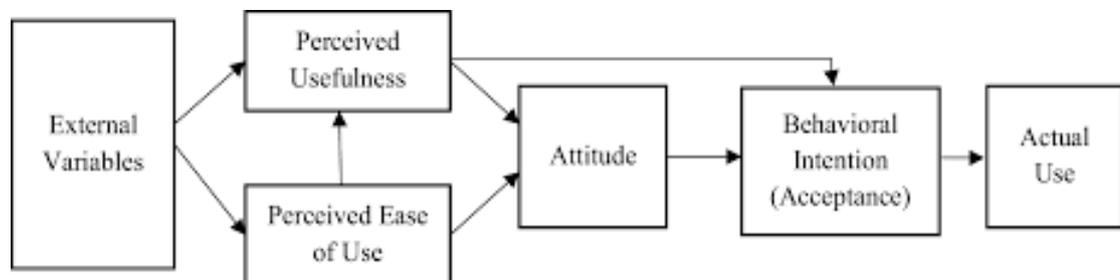


Figure 2.1. Technology Acceptance Model

2.6.2. Studies that have used TAM

The following are studies that have been guided TAM while investigating e-procurement related phenomenon:

- a) Mgidlana's in 2014 study which investigated factors affecting the adoption of e-procurement system technologies from the supplier perspective utilised TAM as a theoretical guide. Mgidlana's study was conducted in Pretoria, South Africa.
- b) Sang (2015) utilised TAM as a theory to predict e-procurement system in the independent commission in Kenya.
- c) Singh and Punia (2011) utilised TAM in their study of employees' adoption of e-procurement system in an empirical study in Uttarakhand, India.
- d) Pasiopoulos, Siskou, Galanis, Prezerakos, Moisoglou, Theodorou, Kaitelidou(2013) utilised TAM in a study of the implementation of e-procurement system in the health sector in Greece.
- e) Baharuddin (2014)'s study of factors that influence the use of e-procurement system in manufacturing SMEs in the Northern Regions of Malaysia utilised TAM as a theoretical guide to the study.

2.7. The strength and limitations of the TAM

2.7.1. The following are the strength of TAM:

- TAM is the mostly used theoretical model when investigation the behaviour of intended users towards a newly adopted system. According Chuttur (2009) TAM has been the only one which has been the only one which has captured the most attention of the Information Systems community. Dinda (2015) adds that TAM has been used widely in most e-commerce studies owing to its easy to its ease of use and extensive modifications to rectify on its weaknesses.
- TAM helps to quickly identify perception of the intended users towards the introduction of IT system and assist in assessing the anticipated success of failure of such system. According to Ajibade (2018) TAM assumes that when users perceive that the system is useful and easy to use, they will be willing to use it.
- TAM is the most reliable theoretical model in determining the behaviour of system's users towards the introduction of the new system. According to Chuttur

(2009) TAM has maintained its consistency in predicting and explaining systems adoption for many IT studies.

2.7.2. The following are the weaknesses of TAM:

- One main weakness of utilising TAM in a research is its disregard of the role users' attitude when a new IT system is to be introduced. According to Kim, Chun and Song (2009) TAM discount the role of attitude in explaining technology acceptance behaviour.
- TAM highlights the behaviour of users towards the intended system as if they have a choice or opinion regarding such adoption and overlook the instances where the adoption of the IT system is mandatory. According to Chuttur (2009) of the large number of studies carried on applying TAM to explain and predict the voluntary use of the systems very few studies have considered systems that were for mandatory use.

2.8. Chapter Summary

It has been revealed through literature reviewed that there are still gaps in the availability of knowledge regarding the adoption of e-procurement system in South Africa in particular and in some selected countries on the African continent in general. Though a lot of common factors have been revealed, they were all investigated from the perspective of the organisation and its employees or procurement professionals and not from the supplier/contractor point of view. Investigating the views of the SMME owners doing business with the eThekweni Municipality concerning the adoption of e-procurement system as a new system of bidding was aimed at providing the point of view of the suppliers/ contractors that are expected to utilise e-procurement.

Chapter three: Research Methodology

3.1. Chapter Introduction

This chapter discusses the following: the study design, the research settings, study population, sampling, sampling procedures, inclusion and exclusion criteria, sample size, determination, recruitment of participants, data collection, pilot study, as well as ethical considerations.

3.1.1. Study design

For this study, a qualitative, descriptive and explorative study was employed to address the views of SMME owners following the adoption of e-procurement system by the eThekweni Municipality as its procurement system. Qualitative research was used because according to Queiros (2017) this method helps to understand a complex reality and meaning of actions in a given context and focuses on the understanding and explanation of its dynamic social relations. Berman (2017) states that qualitative research is used to explore why and how the phenomenon occurs, to develop a theory or to describe the nature of an individual's experience.

Descriptive research helps the researcher to have a clear understanding of the phenomenon being studied. Employing descriptive research helped in gaining a better understanding of the views of SMME owners regarding their experience of utilizing the e-procurement system. According to van Thiel (2014) descriptive research is research in which events or characteristics of certain subjects are described. It can be empirical, although ordering can take place in terms of other paradigms. Lambert (2012) defines descriptive research as a comprehensive summarisation, in everyday terms, of specific events experienced by individuals or a group of individuals.

Explorative research provides information regarding a social phenomenon which is new and for which little or no information exists. This research design was employed because the use of e-procurement system by all South African government entities in general and by the eThekweni Municipality in particular, is a fairly new phenomenon and therefore more information about it is necessary. According to Van Thiel (2014) it investigates a subject about which little or no information is available,

thus making it suitable for the study. According to Ngunyulu (2013) exploratory research is aimed at exploring the in-depth knowledge and understanding of experiences and perceptions of the selected population through asking questions and probing again and again until data is saturated.

3.1 Research Setting

This study was conducted in Durban City (the eThekweni Municipality), which is the biggest city in the province of KwaZulu Natal and the third largest city in South Africa. It is situated on the east coast of South Africa. According to Census 2011 the population of eThekweni Municipality is estimated to be around 3.4 million people.

Source: <https://www.durban.gov.za/>

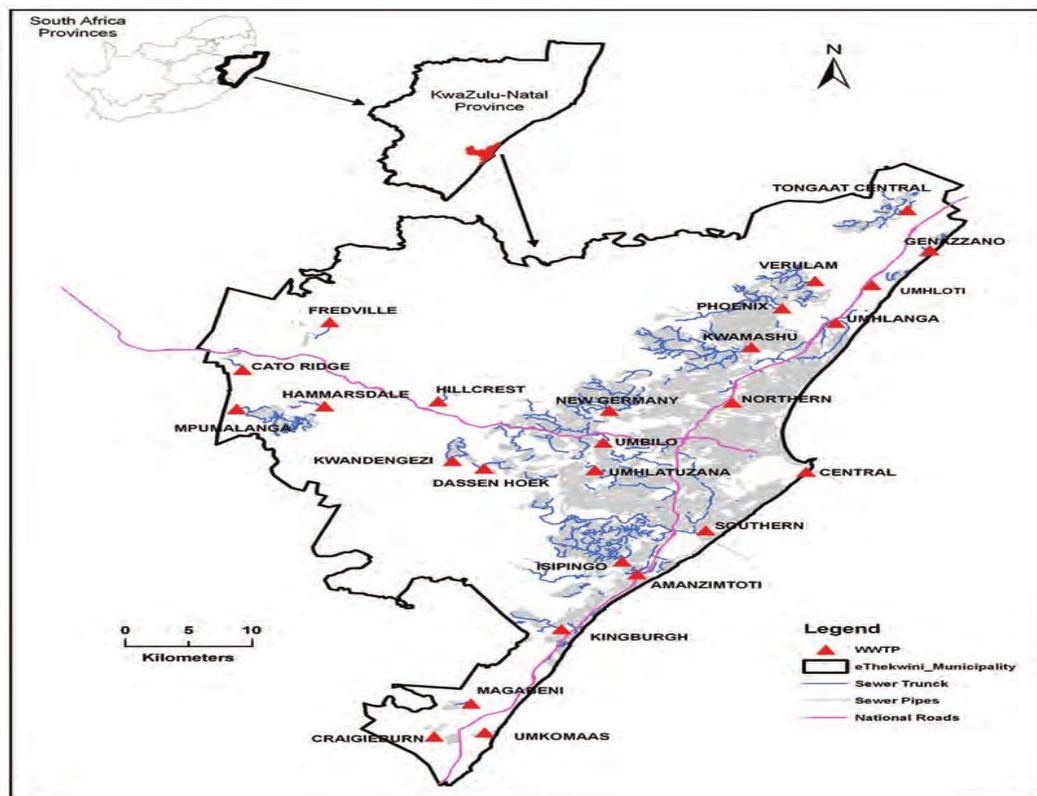


Figure.3.1 showing the map of eThekweni Municipality

eThekweni was founded in 1995 after the dawn of the new democratic dispensation, it was founded after the incorporation of townships which were under the KwaZulu

government, townships and suburbs which were under the Durban Corporation, and surround rural areas which were managed by different tribal authorities on behalf of the King of the Zulus and the former KwaZulu government.

3.2 Study population

In research, the population refers to the group of individuals or objects which are affected by the phenomenon being studied. It is from this group that research participants are selected. According to Alvi (2016) population refers to all members who meet a particular criterion or criteria specified for the research population. Bhattacharje (2012) defines population as all people or items with the characteristics that one wishes to study. The population for this study was the SMME owners who are doing business with the eThekweni Municipality, either by supplying goods or providing services required by the Municipality. According to the 2015 eThekweni Municipality Annual Report, the number of SMME owners registered on the Municipality's database was estimated at 30 000.

3.3 Sampling method

Sampling is the selection of a certain smaller population from the study population to determine the population's perception, feelings, and views regarding a certain phenomenon. Alvie (2016) defines sampling as a process through which a sample is extracted from the population. According to Neeman (2015) it is the selection of a small set of cases from the large population in order to generalize. In this study, purposive sampling was used to identify the SMME owners to be interviewed. Purposive sampling or judgmental sampling is a sampling method in which the researcher decides on the type of information he/she wants for the study and decides on the types of participants based on their knowledge, experience and involvement in the phenomenon being studied. According to Etikan (2016) purposive sampling, also known as judgmental sampling is a non-probability approach which involves deliberate choice of participation in a research study according to the qualities the participants possess. In purposive sampling, the research decides on the type of information and decides to find the people who have that information by virtue of their knowledge. The purpose of the study, as has been declared, is to explore and describe the views of SMME owners following the adoption of e-procurement

system by the eThekweni Municipality. For this purpose, SMME owners are the relevant sample because of their involvement with the subject being investigated.

3.3.1 Inclusion criteria

Inclusion criteria refers to the set of characteristics decided upon by the researcher in identifying and deciding on individuals who must participate in the study for its objectives to be achieved. According to Patino & Ferreira (2018) inclusion criteria are defined as the key features of the target population that the investigator will use to answer the research questions. In this study participants were eligible to participate if they:

- had a revenue of less than R5 million per annum which is the threshold that defines a Small Medium and Micro Enterprise according to the Small Enterprise Development Agency (SEDA) (2016) Report;
- reside within the eThekweni Municipality area; registered in the eThekweni Municipality database system and are eligible to do business with the Municipality; and
- have utilized or always utilise the eThekweni Municipality Supplier Self Service System (e-procurement) in attempting to achieve business opportunities within the past six months prior to the conducting of this study.

3.3.2 Exclusion criteria

Exclusion criteria refers to the characteristics that deny certain individuals the opportunity to participate in a study even though they may otherwise have been eligible to be included. According to Patino & Ferreira (2018) exclusion criteria are defined as features of the potential study participants who meet the inclusion criteria but present with additional characteristics that could interfere with the success of the study or increase the risk of an unfavourable outcome.

Those who were excluded to participate in the study were the SMME owners who:

- had not utilised the eThekwini Municipality Supplier Self Service System prior to the study being conducted.;
- were no longer residing in the eThekwini Municipality area but still had their businesses within the Municipality, because it would have been difficult for the researcher to reach them; and
- had no interest in using the eThekwini Municipality Supplier Self-service System.

3.3.3 Sample size

The sample is the number of research participants who are selected and agreed to take part in the study. The sample size in a qualitative research is usually relatively small because its main objective is not to generalise but to gather in-depth information about a phenomenon According to Gentles (2015) while quantitative research requires a sufficiently large sample size to produce statistically precise quantitative estimates, smaller samples are used in a qualitative research. This is because the general aim of sampling in the qualitative research is to acquire information that is useful for the understanding the complexity, depth and variation, or context surrounding a phenomenon rather than to represent populations as in a quantitative research. For this study eight participants were recruited and responded. This use of a small sample is supported by Edwards (2012) who suggested that qualitative researchers generally study few participants but delve more deeply into those individuals' settings, subcultures, and scenes hoping to generate a subjective understanding of how people perceive, reflect, role take, interpret or interact with the phenomenon being researched.

3.4 Recruitment of research participants

The recruitment of participants started in February 2018 and ended in May 2018. The researcher arranged a meeting with the Deputy Head of the eThekwini Municipality Supply Chain Management Unit for permission to conduct the study. Once the permission had been received the researcher arranged and held a meeting with the buyer who agreed to engage the SMME owners who were willing to partake

in the study. The purpose and objectives of the study were explained to all the parties above. The buyer introduced the study to the SMME owners individually. She then obtained and gave names and contact numbers of the SMME owners to the researcher for all those that showed an interest and met the criteria. These were then contacted personally by the researcher who further met and explained the purpose of the study and asked the SMME owners for their voluntary participation in the study.

3.5 Pilot Study

According to Dikko (2016) a pilot study is a trial phase of the study where the researcher checks the viability of the research instrument to be used in the main study. The aim is to evaluate the correctness of the study implements such as questionnaires, interview schedules and even assess if the questions will achieve the objectives of the study. According to Dikko (2016) a pilot study is a mini version of the research or a trial run conducted in preparation for a full-scale study and may be conducted to pre-test a research instrument. The pilot study was conducted in February 2018 with two participants who the first ones were to respond to determine whether or not the interview schedule of the research was clear and if it would yield the data that would answer the research questions efficiently. The participants concurred that interview questions were simple and easy to understand. The data gathered during the pilot study was incorporated into the rest of study. According to Duma (2007) data from a pilot study can be analysed together with the data from the main study where there is no danger of contamination.

3.6 Data collection process

For this study, a semi-structured interview data collection method used for data collection. According to Gill (2014) a semi-structured interview consists of key questions that help to define the areas to be explored but allows the interviewer or the interviewee to diverge in order to pursue an idea or response in more detail. The semi-structured interview guide was developed by the researcher according to

interview objectives. Data collection started during the first week of March, following the pilot study, and ended the first week of May 2018. All interviews were conducted at the homes of the SMME owners. The interviews were conducted in English.

3.7 Ethical considerations (EC)

EC to conduct the research was received from the UKZN Humanities and Social Sciences Research Ethics Committee (See Annexure A). Permission to access staff to investigate their use of the Supply Chain Management e-procurement system as part of research was obtained from the eThekweni Municipality Institute of Learning (MILE). The following ethical principles were followed and observed throughout the study.

3.7.1 Voluntary participation and harmlessness

Voluntary participation and harmlessness refers to the right of all participants to self-determination of the participants to partake in or withdraw from being part of the study without any harm or loss. According to Bhattacharjee (2012) voluntary participation and harmlessness means that subjects in the research must be aware that their participation in the study is voluntary, that they have freedom to withdraw from the study at any time without any unfavourable consequences and they are not harmed as a result of their participation or non-participation in the project. It is the responsibility of the researcher to make the research participants aware of the above. In observing this, the participants were given an information sheet and verbal assurance that the right to participate or not to participate in this study remained theirs and they could have withdrawn their participation at any given time without any prejudice.

3.7.2 Anonymity and confidentiality

Anonymity and confidentiality refer to the protection of the participants' identity and information, protecting them from their personal identities being accessed by others. According to Bhattacharjee (2012) anonymity implies that the researcher or readers of the final research report or paper cannot identify a given response as originating from any specific respondent. Confidentiality implies that a researcher can identify a person's response but promises not to reveal that person's identity. The participants were assured that their responses were not to be attached to individuals and that their identities would not be included in the research only their responses were to be reported upon.

3.7.3 Beneficence and non-maleficence

Beneficence refers to making sure that others are well treated. According to Jelsma and Clow (2005), it is the responsibility of the researcher to make sure that all participants are referred to an appropriate facility to receive help whenever they need such services. This was the principle that was upheld throughout the study. In the study the eThekweni Municipality Supply Chain Management Unit made itself available for any challenges related to the study. Non-maleficence means providing protection to the participants from any harm that may be as result of their partaking in the study. According to Jelsma and Clow (2005), ethically, the researcher must avoid occasions that can cause damage. In this study, only the questions that related to specific business transactions between the eThekweni Municipality and individual SMME owners were asked and personal questions were avoided at all cost.

3.7.4 Justice

Justice in research refers to the fair and equal treatment of all research participants. According to Scott (2013), in the context of research activity, the principle of justice can be conceptualised as fairness, thus research participants should be treated fairly. In this study all research participants were treated equally and fairly. Those who were selected to be part of the study had similar characteristics and those who were

deemed not eligible were dealt with fairly. The selection of participants was conducted based on inclusion and exclusion criteria and participants were frequently reminded of their rights to participate or not to participate in the study.

3.7.5 Risk and Benefit

Risk refers to the direct prejudice or discomfort that may be incurred by the participant from participating in the study whilst benefit refers to the direct gain a participant may experience as a result of participating in the research. According to Burns (2015) risk related to the potential of anticipated discomfort following the exposure to a study. There were no direct risks for the participants emanating from partaking in this study. For instance, the questions in the interview guide were about the views of SMME owners regarding the language, the level of education, the access to free or affordable computer technology, the level of computer skills as well as the legality of the e-procurement system used in the eThekweni Municipality. In participating in this study there was no monetary benefits offered to the participants. The main benefit was the knowledge of having contributed to the body of knowledge regarding a fairly new phenomenon of e-procurement system within the South African Public Sector. Another benefit was the awareness of contributing information which may cause improvements in the eThekweni Municipality e-procurement system (Supplier Self Service System).

3.8 Chapter Summary

This chapter discussed the research design, population, sampling, data collection procedures as well as ethics. This chapter described the process that was followed in conducting the study which served as an audit trail which offered a provable path which was followed by the researcher during data collection.

Chapter 4: Data Analysis

4.1 Chapter Introduction

This chapter presents the procedures followed to analyse and interpret data gathered from the study. It also describes the methods used by the researcher to ensure trustworthiness throughout the study. It discusses data management, data analysis and the methodology used in this study.

4.2 Data Management

Data management is the way in which qualitative data gathered and resources used are managed. According to Miles, Huberman & Saldana (2014) data management involves reducing large quantities of qualitative data into smaller and more manageable fragments, a process that must be done concurrent with data collection.

The researcher transcribed each of the recorded interviews within 48 hours of collection to ensuring that all participant's detailed answers were clearly preserved. The process of transcribing started with the researcher typing all handwritten answers that were gathered from the semi-structured interviews. The answers from the interview schedules were aligned to the questions they were answering and typed word-for-word. The names of participants were removed from the transcribed data to ensure anonymity. According to Stuckey (2014) to ensure anonymity in the transcription, the participants name has to be removed. Transcribing was done in the researcher's study room to avoid distraction and to maximise focus on the work.

The transcribed data were saved in the researcher's personal computer, on a flash drive and on an external hard drive. The hard copies were printed and filed safely in the researcher's study room. According to Creswell & Creswell (2013) data storage and handling includes developing backup copies and storing them in different places.

Data from this research will be stored for five years from the year of publishing and will later be destroyed. This is in line with the UKZN requirements. All answers to

the semi-structured interview used in the research were first handwritten in the interview schedule and later typed to ensure proper readability. They were saved in the researcher's personal computer and the folder was named 'Interview schedule'. The content of the interview schedule was shared with the research Supervisor.

4.3 Data analysis

According to Flick (2013) qualitative data analysis is the classification and interpretation of linguistic (or visual) material to make statements about implicit and explicit dimensions and structures of meaning-making in the material and what is represented by it. Data analysis was conducted within 48 hours of data collection due to the researcher work schedule and due to the fact that the answers to the semi-structured research questions were already handwritten, chances of them being lost were minimal.

The data was manually analysed by the researcher. This involved ensuring confidentiality of participants by removing their names and replacing these with numbers. Data was analysed using thematic content analysis. According to Anderson (2007) thematic content analysis is a descriptive presentation of qualitative data. Alhojailan (2012) defines thematic analysis as a qualitative data analysis that is used to analyse classifications and present themes (patterns) that relate to the data. The use of thematic content analysis allowed the researcher to identify themes that arose from the answers of participants in the interviews. Thematic analysis also allowed the researcher to have a clear description of the opinions of participants on the issue of the adoption of e-procurement system by the eThekwini Municipality.

The researcher deemed the thematic analysis approach to be appropriate for this study because it is providing the prospect for reviewing the data and themes related to the research questions. Maguire and Delahunt (2017) have outlined the following six steps involved in thematic analysis. These are:

Step 1: Familiarization with data: the first step in any qualitative research is reading and re-reading the transcripts. The researcher must be familiar with the entire body of data (Maguire & Delahunt 2017). It is during this stage that the researcher seeks understanding of the responses of the participants through reading

with understanding. According to Braun and Clarke (2013) researchers must immerse themselves in, and become intimately familiar with, their data.

In familiarizing himself with the data the researcher started to read and reread each and every interview that he had conducted, this was to allow him to become intimately familiar with data. This helped the researcher to double-check the interview schedules and to pick up mistakes which may have occurred while typing the handwritten responses. The researcher highlighted keywords, trends and opinions, ideas and comments of significance which captured his attention regarding the research questions. The researcher identified these through marking themes with different colours in all interview transcriptions.

Step 2: Generating initial codes: in this step the data is organised a meaningful way. This is where data reduction takes place, large chunks of data are reduced to smaller meaningful words. Thesis where themes emerge. Answers with similar meanings are highlighted with the same colour. Another way of coding the themes is by cutting them out and pasting them together to form a theme. The purpose of this process is to reduce data but to keep the meaning of such data. The researcher must select data that is guided by the theory and by the concept of the research and themes which have no significance for the study must be removed. According to Braun and Clarke, (2013) coding of data must follow a conceptual framework and must be based on the theory.

Keeping in line with this step, the researcher began with the manual coding using different colour markers to group together similar interesting features of data with common meaning and which relate to the research question. According to Theron (2015) coding is a method of organizing the data so that the underlying messages portrayed by the data may become clearer to the researcher. This was done methodically to all eight interview schedules which were answered by participants, by connecting and putting data with similar features together under each code. Answers received from the semi- structured interviews conducted were coded and those which had similar meanings were compared to ensure co-occurrence.

They are the views about language used in the e-procurement system, the level of education of SMMEs owners, accessibility of computer infrastructure with internet,

SMME owners' computer skills, as well as the legality of the contract entered into through the use of e-procurement. The researcher coded both major and opposing features related to the questions and created patterns from the codes. Extracts from all interview schedules were utilized to support data according the concepts and questions asked.

Step3: Searching for themes: A theme is defined by Maguire & Delahunt (2017) as a pattern that captures something significant or interesting about the data or the research question. In stage three of the six stages of thematic analysis the researcher put together similar codes with similar meaning to form themes. These themes must be titled clearly. According to Maguire and Delahunt (2017) at the end of this step the researcher must have the codes organised into themes that seemed to say something specific about the research question.

The researcher searched and organised themes by grouping together codes with similar meaning under the same heading. All pertinent coded data extracts within the recognized themes and subthemes that emerged were organised to develop possible themes and subthemes. Individual themes were recorded on separate pages.

Step 4: Reviewing of themes: During this stage the researcher must look back to step three and check that the themes developed make sense and that they are related to research question and objectives. According to Maguire and Delahunt (2017) during this stage the researcher must review, modify and develop, the preliminary themes that were identified in stage 3. The researcher must check if those themes make sense. Maguire and Delahunt (2017) list the following questions to be raised in step 4:

- Do the themes make sense?
- Does the data support the themes?
- Am I trying to fit too much into a theme?
- Are there other themes in the data?
- Are there themes within themes?

The researcher looked back at all themes identified, investigated ideas that formed those themes, checked if they made sense, and examined all ideas which were raised

by the participants during the interviews. Themes were confirmed and themes that lacked data to back them were eliminated, this assisted the researcher in removing data which were irrelevant to the research objectives. The views, opinions and experiences of SMME owners following the adoption of e-procurement system by the eThekweni Municipality were clearly highlighted and identified. A theme chart was used to proceed with this exercise.

Step 5: Defining and naming themes: in this step the researcher must be sure of the story each theme tells. According to Braun & Clarke (2013) step 5 requires the researcher to write a detailed analysis of each theme which will explain each story that each theme tells and how that story is related to the data. The meaning of each theme has to coincide with its naming.

The researcher looked for identified ideas and meanings within the themes and subthemes and determined how each related to each other and to all other interview answers. Names were assigned to each final theme developed. This was done by the researcher and was confirmed by the research supervisor.

Step 6: producing the report: this is the final stage where all themes identified are backed by quotes from data, in order to come up with a report in a narrative form describing the experiences of the participants. The researcher grouped themes into five levels of the framework as listed several times above and quotes from the interview schedules were used to support the theme development related to five framework concepts.

4.4 Data analysis of this Study

The following describes how this study was analysed, it involves the demographic analysis and themes which were derived from the data.

4.4.1. Demographic data analysis

For this study, eight individual interviews were conducted. Of the eight, seven were conducted with males and one was with a female. Seven of the participants were Black African and one was an Indian. The classification is as per Statistics South Africa Demographics. The ages of the participants ranged between 32 and 45. The

levels of participants education was as follows: four participants have degrees, the two have matriculation certificates and the other two have diplomas. All participants were directors of their respective SMME companies. In terms of SMME owners' experience, the individual with the shortest experience had been an owner of a company for five years and the individual with the longest experience had been running an SMME company for fifteen years. The participants were given a chance to choose between being interviewed in English or in IsiZulu. They all opted for English pointing out that they were used to doing business in English.

4.4.2 Findings

The following are the themes which emerged from data as findings of this study:

Theme 1: English as a Business language and the importance of SMME owners' level of education

This theme emanates from two research questions that were posed to research participants to establish the extent to which the language used, and their education influenced their successful utilization of the Supplier Self Service System. Demographic data revealed that seven of the eight participants are IsiZulu speakers while one is an English speaker. It was also revealed that the language used in the eThekwini Municipality Procurement System is English. This is the case throughout the process of online bidding, from the time the suppliers log in to the system to view requisitions uploaded by the Supply Chain Officials of the eThekwini Municipality, the time the SMME owner submits the requisition with his or her pricing for goods, until the issuing of a complete order. In short, the system is presented entirely in English. The views which were raised by SMME owners were as follows:

- The system is in English, and this is a commonly accepted business language in South African;
- This makes the system more understandable to almost everyone. The system is in English and it is highly important to understand it for the correctness of procured goods and services. Participants also stressed that the system is in

English and it is very important to have a good command of English if one is to use the Supplier Self Service System efficiently; and

- The participants of this research themselves had no difficulties with the usage of English as a language in the e-procurement system process but raised concern for their fellow SMME owners, who did not understand English

Owners were asked in probing questions what they think happens to SMME owners who do not understand the English language. From the answers of the participants it was believed that if English is not understood, the wrong quality and wrong quantities of products could be specified and may be quoted for. Those SMME owners may then lose out on business opportunities. It was also revealed that SMME owners who do not understand the English language lose out on business opportunities simply because it would become a challenge to follow the system's process step-by-step for someone without a good English command. Other challenges that were raised by the participants with regards to English as a business language, are that there are a large number of people who are illiterate and who may wish to conduct business using programs like the Municipal Supplier Self Service System, but they are hindered by the lack of language understanding. This is confirmed by the eThekweni Municipality Spatial Development Framework (2018/9) which indicates that illiteracy is sitting at 52% in the eThekweni Municipality. Some of the views that emerged from data were that SMME owners had no choice over language used. According to these view English is enforced upon SMME owners and it limits access to the system thus meaning less business opportunities for SMME owners who are not proficient in the English language. The above is also supported by the Statistics South Africa Census Report (2011) which states that 67% of residents in Durban are IsiZulu speakers, 23% speak English and 10% speak a range of other languages. According to data received from responses given by the SMME owners, English is recognized as a business language though there is a feeling that it may have been imposed on IsiZulu speakers. Some SMMEs owners interviewed raised opinions with regard to English being a Business Language. One SMME owner recommended that the spirit of multilingualism should be enforced at all levels of the Municipality including that within the Supplier Self Service System. The Municipality should have a clear language policy and plans so that its correspondence reflects the KZN linguistic diversity. The

recommendation is that isiZulu should be incorporated in the Supplier Self Service System to make it more progressive and successful.

This study also revealed that SMME owners' level of education is equally important. Two of the sample of SMME owners have Matric Certificates (Grade 12), two have National Diplomas (one has a National Diploma in Civil Engineering and the other has a National Diploma in Public Relations) and four have Degrees (three have BA degrees, one has a B Admin). The fact that the minimum qualification of the participants is Matriculation is an indication that at least a secondary level education is necessary for an efficient and successful utilization of the Supplier Self Service System. All participants agreed that education is very important for understanding steps in the Supplier Self Service System. It was the view of all participants that proper education, though they did not stipulate to which level, is very important for understanding the Supplier Self Service System. They also said that without education it would be hard to understand the many steps involved in the Supplier Self Service System let alone understanding the required quantities, qualities, and specifications of products or service being procured. There are terms in use which are not easy to understand for an uneducated person and this will have a negative impact on the SMME owners' usage of the system. The participants of this research, themselves, do not have educational challenges which could hamper them from successfully using the Supplier Self-Service System, but they have raised challenges they have observed from SMME owners who do not have education and who have not been able to bid online. The group of SMME owners who had no education could not be included in the study simply because the study sought to explore and describe the views of the SMMEs owners who have used and are still using the eThekweni Municipality e-procurement system. The challenges that emerged ranged from the wrong products being quoted for, the wrong quality, the wrong quantities, wrong specifications to not understanding terms and conditions stipulated. This is supported by the eThekweni Municipality Spatial Development Framework (2018/9). According to this framework, 5,1% of the eThekweni Municipality has completed primary education, 35% have some primary education, 2,5% have had no schooling, 31,3% have some secondary education, only 21,4% completed secondary education, and only 3,4% have tertiary education.

Theme 2: The importance of access to computer technology with internet for the utilization of the Supplier Self-Service System.

This theme was arrived at through an interview question which sought to explore and describe the views of SMME owners with regard to the importance of access to free or low-cost reliable internet for accessing the Supplier Self Service System which is an internet-based system which dictates that SMME owners must have reliable computer systems with internet to access the system. However, there is no free or low cost of internet and SMME owners must add an internet cost to their pricing for goods and services. Data also revealed that it is very important to have access to computer-reliable technology with internet when utilizing the Supplier Self-Service System because it is online. For one to access it he/she must first have a computer device for example a desktop computer, a laptop or in recent days a cellphone. SMME owners access internet from their office desktops, personal laptops, cellphones as well as from internet cafés but data indicates that there is a lack of computer technology access for some SMME owners especially in the eThekweni Municipality rural areas with poor networks as compared to those operating in the City center. The above is supported by the fact that access to computers and internet in Durban and in South Africa in general is behind compared to the rest of the world According to Kramer (2016), South Africans only have 47% access to computer technology with internet as compared to the more than 90% world standard and this 47% is concentrated in the urban areas of the country. One of the views was that internet cafés were not to be trusted because of the need to protect business information. It was agreed that access to computer technology with internet is very important so that e-procurement system can easily be utilised and that access to internet is crucial if SMME owners want to use the Supplier Self Service System. The SMME owners interviewed had no challenges with regard to the access to computer technology with internet except for a poor network connection from time-to- time but have recommended that the eThekweni Municipality should provide access to computers for the SMME owners so that they can access the Supplier- Self Service System.

Theme 3: The importance of computer skills for SMME owners

This theme is directly related to the first theme which focused on the language used in the Supplier Self Service System and the influence of SMME owners' levels of education and the effect these may have on the efficient utilization of the Supplier Self Service System. The theme emanates from a research question which sought to explore and describe the views of SMME owners with regard to the importance of having computer skills in order to utilize the Supplier Self Service System efficiently and successfully. SMME owners view computer skills as very important to have for one to be able to utilize the eThekweni Municipality e-procurement system. From their responses it became clear that computer skills are important because without them SMME owners cannot use the Supplier Self Service System and that means they cannot bid on it. For example, one of them directly pointed out that computer skills are as important as general education. Without computer skills you cannot operate the Supplier Self Service system. In this theme it was also revealed that SMME owners associate education and computer skills by saying that without education one cannot be computer literate. SMME owners interviewed regarded themselves as having adequate computer skills for the utilization of Supplier Self Service System. It was their view though that more training may be needed for other SMME owners from the eThekweni Municipality. This is supported by Ogunsola's (2017) research which found that the majority of the eThekweni Municipality SMME owners regard themselves as competent enough to incorporate IT into their own businesses for efficiency purposes. This contradicts the earlier finding on the SMME owners' levels of education and will be recommended for further research.

Theme 4: The legality of e-procurement system transactions

This theme emanates from the research question which sought to explore and discover the views of SMME owners regarding the legality of the transactions entered into between them and the Municipality since the process is done online and there is no physical contact with the Supply Chain Management Officials. It also aimed at exploring the views of SMME owners regarding the existence of a legal framework guide for e-procurement system within the Municipal sphere of government. This theme was included to explore the trust the SMME owners have for the e-procurement system because at the moment there is no legal regulation

which guides the specific use of e-procurement system for the South Africa's public sector in general and for the eThekweni Municipality in particular. This is supported by Kramer (2016) when he states that the introduction of an e-procurement system, development of an efficient procurement system as well as its effective implementation depends on the adequacy of the applicable permitting and regulating laws governing e-commerce. At the moment there is hardly any attention being paid to legislative issues. However, all participants regard transactions entered into through the utilization of Supplier Self Service System as being legally binding on both the eThekweni Municipality and on them as contractors. This, according to participants, is because the system provides well-defined steps that bind both parties. The SMME owners also stated that processes are guided by the Municipality, Financial Management Act (MFMA) of 2003 and the eThekweni Municipality Supply Chain Management policy as well as the operating procedures thus making it legal.

4.4.3. Scientific rigor of the Study

According to the National Institutes of Health Peer Review (2016), the scientific rigor is the strict application of the scientific method to ensure robust and unbiased experimental design, methodology, analysis, interpretation and reporting of results. To ensure scientific rigor of enquiry in this research, the researcher addressed the issues of credibility, conformability, dependability and transparency.

4.4.3.1. Credibility

Moon, Brewer, Januchowski-Hartley, Adams, & Blackman, (2016) refers to credibility as the degree to which the research represents the actual meanings of the research participants, or the truth value. The management of data, and the analysis of such data was carried out 48 hours after each interview was conducted due to the researcher's work schedule. The data was carefully stored in a personal computer and on a separate flash drive, a file with hard copies was created and stored safely in the researcher's study.

Engagement with data

The researcher spent 3 months with the data collected. Data was collected between April and May 2018 and data analysis was conducted in June 2018.

Verification of participants' responses

The researcher made a summary of the key points towards the end of each interview and asked if there was any misrepresentation or omission in the record of answers provided during the interview.

Peer debriefing

The researcher was guided by another qualitative researcher in reviewing and analysing data for this study.

Audit trail

The researcher compiled a report on the method used to collect data and processes followed in conducting this research.

4.4.3.2. Conformability

According to Moon et al., (2016) to achieve conformability, researchers must demonstrate that the results are clearly linked to the conclusions in a way that can be followed and, as a process, replicated. The researcher has made the raw data and emerging themes available to the supervisor. The supervisor decided that all themes and interpretation are relevant to the research objectives

4.4.3.3. Dependability

Moon et al., (2016) refer to dependability as the consistency and reliability of the research findings and the degree to which the research procedures are documented, allowing someone outside the research to follow, audit, and critique the research process. To ensure dependability in this research the researcher documented all processes in detail from the proposal to the research design. The researcher adopted, followed and utilised Braun & Clarke's thematic steps as outlined by Maguire & Delahunt (2017) where explanations on how data was analysed is provided. The

researcher's role as a student of the University of KwaZulu Natal was clearly explained to the participants.

4.4.3.4. Transferability

According to Moon et al., (2016) this refers to the degree to which the phenomenon or findings described in one study is applicable or useful to theory, and future research. The interviews carried out in this study will be made available for future use.

4.5. Chapter Summary

This chapter discussed data management and data analysis of the study and gave a clear description of how the data was managed and analysed by the researcher. Five themes which were derived from data were discussed and issues, opinions and ideas which were raised by SMME owners were described

Chapter 5: Discussion of findings, conclusion and recommendations

5.1 Chapter Introduction

This chapter discusses the research results, the recommendations and concludes the study. The results are discussed based on five themes which were derived from data. These are: English as a business language, the importance of education in the Supplier Self Service System, the importance of computer technology with internet, the importance of computer skills for SMME owners as well as the legality of e-procurement system transactions.

5.2 The sample

The sample for this study was made up of eight participants, seven of which were males and one was female. The reason for this gender bias was that most SMME owners focus on construction and on supplying goods and services to the construction industries and these are dominated more by male SMME owners than female. Another reason for this gender bias was that more men were willing to participate in the research than their female counterparts for reasons unknown to the researcher though his assumption was that more opt to be in this business than their female counterparts. The study also found that there is diversity in terms of education levels of SMME owners which range from matric to degree level. The study found that the ages of SMME owners who participated in the study ranged from youth to young adults between 30 and 45. The study also found that SMME owners have significant experience of being in business that ranged from 5 to 15 years.

5.3 English as a business language and the importance of SMME owners' level of education

The study found that the language used in the eThekwini Municipality Procurement System is English. This is the case throughout the process of online bidding, from the time the supplier logs into the system to view requisitions uploaded by the Supply Chain Officials of the eThekwini Municipality, to the time the SMME owner submits a requisition with his or her pricing for goods, and even up to the issuing of a complete order. The study found that SMME owners viewed English as a common

business language suitable for conducting business. SMME owners regard the understanding of English as important for the efficient utilization of the e-procurement system. The study also found that SMME owners view English as a barrier to utilization of e-procurement system for those who do not understand the language because they may not understand the requisitions and may quote for the wrong quantities, quality, and specifications of goods and services. This study also found that understanding English helps SMME owners to clearly understand the steps involved in the eThekweni Municipality e-procurement system. Another finding of this study was that the SMME owners were of the view that the eThekweni Municipality should in the future consider the use of both English and isiZulu to accommodate SMME owners who do not understand English. This is supported by the Census 2011 which states that IsiZulu is spoken by 63% of the eThekweni Municipality residents, English is spoken by 27% and other languages form 10%. The issue of language usage in e-procurement system is a new aspect and has only been investigated in this study.

The study found that SMME owners viewed education, just like understanding English, as being very important in understanding and in the utilization of eThekweni Municipality e-procurement system. The study findings did not recommend a specific level of education required by the SMME owners for the efficient utilization of eThekweni Municipality e-procurement system, but the demographic data showed that at least a higher secondary level of education may be enough for SMME owners to utilize this System. The study also found that the SMME owners are of the view that education is important because lack of education may lead to misinterpretation of the specifications leading to quotations for the wrong quality and wrong quantities leading to loss of business for SMME owners. SMME owners who participated in the study are of the view that it is difficult to understand the eThekweni Municipality e-procurement system processes when one is not educated. The steps to be followed, and business terms used in the system are not easy to understand for an uneducated person. This is supported by Ibem & Laryea (2015) in their study of barriers to and prospects of e-procurement system when they list illiteracy as one of the barriers. According to them contractors who were marginalized in the past are still

marginalized now because of general illiteracy let alone being computer illiterate. The study found that the SMME owners who participated in the study did not face challenges as a result of education but had observed that illiterate SMME owners were side-lined by lack of education from bidding through the Supplier Self Service System.

5.4 The importance of access to computers, technology and the internet.

The study found that SMME owners view access to computer technology with free/low cost, reliable internet as an extremely important aspect for the effective and efficient utilization of the eThekweni Municipality e-procurement system because every part of it is accessed through the internet. The study also found that SMME owners hold the view that there is no access to computer technology with free internet provided by the eThekweni Municipality. The study, identified the need for the eThekweni Municipality to provide free access to internet for the SMME owners who cannot afford to have their own internet service. The study also found that amongst SMME owners there is a view that the network is unequally available for different areas of the eThekweni Municipality, with the urban areas having a reliable network as compared to the rural areas. This is supported by Kramer's study in 2016. According to Kramer (2016) South Africa is a developing country, the implementation of electronic public procurement systems may pose some challenges, especially with regard to technology required for the effective implementation and function of such systems. Kramer (2016) further states that the functioning of an e-procurement system is dependent on fast and reliable internet broad band internet service. In addition, Kramer (2016) alludes that in South Africa internet penetration as a percentage of the population is only 47% as compared to 95% for some other countries.

The issue of the lack of access to computer technology with internet was also raised in a study by Laryea and Ibem (2015) where they found the lack of access to information technology infrastructure that supports the use of e-procurement system technologies by emerging firms and those in the remote areas to be problematic. According to these authors internet is not accessible everywhere, some bidders may

not have invested much in information technology infrastructure, and thus e-procurement system favours well –resourced contractors. Laryea and Ibem (2015) go further and state that some small Black Economic Companies (BEE) do not have access to such facilities and the ordinary person does not have access to this electronic equipment. The above was also supported by Azanlerigu (2015) who states that inadequate technological infrastructure is a challenge to the adoption of e-procurement. The study by Jooste (2003) also supports this finding when it found that one of the challenges facing the adoption of e-procurement system in South Africa is a lack of access to information technology infrastructure. This finding was further supported by Orina's (2013) that found that information technology infrastructure must be improved for e-procurement system adoption to be a success. The study found that SMME owners view access to the internet as a challenge towards the utilization of the Supplier Self Services System and they were of the view that the eThekwini Municipality should provide free access to SMME owners in future.

5.5 The importance of computer skills for SMME owners

The study found that SMME owners view the issue of having basic computer skills as a very important aspect necessary for the utilization of the eThekwini Municipality e-procurement system with efficiency and profitability. The study also found that SMME owners who are computer illiterate get left out of bidding for business opportunities. It was found that SMME owners who were part of this study viewed themselves as computer literate although they may have observed that computer illiterate SMME owners get left out of the bidding in the Supplier Self Service System due to lack of computer skills. The study also found that SMME owners are of the view that the eThekwini Municipality needs to provide basic computer skills training for SMME owners in order to increase the pool of suppliers and contractors from which they can get business. This finding is supported by Kramer's study in 2016 which concluded that prospective suppliers/ contractors who will be using the electronic public procurement system need adequate training. Kramer (2016) further states that the problem is that suppliers do not necessarily know how to use new telecommunication platforms and software.

This finding is also supported by Koech's (2016) study that found that it was extremely difficult for the older generation to utilize e-procurement system as they are not computer literate and that more training was required. This finding was also supported by a finding in Bilali's study (2015) which said that skills and knowledge were very important for the successful adoption of an e-procurement system. Chebii (2015) recommended that the government should provide funding for the training of employees as part of enhancing support for the adoption and implementation of successful e-procurement.

5.6 The legality of e-procurement system transactions

This study found that all SMME owners who participated in the study are of the view that all transactions entered into through e-procurement system are legally binding on both parties and that there are no challenges with the legal framework regarding the legality of the of e-procurement. They were of the view that the system is based on the provisions of the Constitution of the Republic of South Africa of 1996, and is guided by the Municipal Financial Management Act (MFMA) of 2003. This is in contrast to the study which was conducted by Laryea and Ibem (2014) which found that with e-procurement system in South Africa it may be difficult to e-sign the documents legally. Documents like tax clearance certificates may not be tamper-proof and may not be legitimate. Laryea and Ibem also found that there is a lack of an aggressive legal control system to report and handle fraud in the electronic communication systems.

5.7 Conclusions drawn for the study

The objective of the study was to gather views of SMME owners following the adoption of the e-procurement system by the eThekweni Municipality. This study comes to the following conclusions based on the views expressed by participating SMME owners.

- This study concludes that English is the only language used in the e-procurement system and that this hinders SMME owners who do not understand the language from doing business with the eThekweni Municipality. It is also the view of the

SMME owners that the system should also be presented in IsiZulu based on the extent to which the language is spoken and understood within the eThekweni Municipality.

- The study also concluded that education is important for the utilization of the eThekweni Municipality e-procurement system to be a success. The study also concluded that those SMME owners with no formal education found it difficult to do business using the e-procurement system.
- The study also concluded that it was the view of SMME owners that access to reliable computer technological infrastructure with internet was key to the successful of the eThekweni e-procurement system, and that SMME owners who could not afford the internet were left out from the bidding. It was also a view of SMME owners that the City should make available facilities where SMME owners can access free internet in order to participate in the e-procurement system bidding.
- The study also concluded that for SMME owners, computer skills are important in the use of the e-procurement system and that those SMME owners without computer skills find it difficult to bid using the e-procurement system. The SMME owners have recommended that the City provide basic computer training for its SMME owners as a means to extend the pool of suppliers and contractors doing business with the city.
- The study concluded that the SMME owners view all transactions entered into through the use of the e-procurement system as legally binding on all parties involved and that there is a proper legal framework guiding the use of e-procurement system by the eThekweni Municipality.

5.8 Limitations of the study

The following are the limitations of the study identified by the researcher:

- SMME owners were at first sceptical about participating on the study sighting that doing business with the eThekweni Municipality is their livelihood and their participation may jeopardise the relationship they have developed over the years. The researcher assured them of anonymity and clear stated the reasons and objectives of the study.

- The researcher did not have access to participants who would have found it difficult to use the system, who would present challenges emanating from the system because the study was about exploring and describing the views of SMMEs using the e-procurement system and not SMMEs who had failed to use the e-procurement system.
- The researcher is full time employed due to this it became difficult to access participants and had to schedule after to visit participants after hours. This meant that fewer participants were accessed

5.9 Recommendations

The recommendations from this study based on the researcher's analysis of data are as follows:

- The Municipality should consider using both English and IsiZulu in its e-procurement system based on the extent to which the IsiZulu language is spoken and understood within the eThekweni Municipal boundaries.
- To improve the understanding of the eThekweni Municipality e-procurement system SMME owners should be encouraged to enroll in and attend adult basic education classes aimed at improving their education level as well as promoting understanding of business practise in general. Another idea may be to encourage school learners to stay in schools to curb the illiteracy cycle.
- For the Municipality and SMME owners to exploit opportunities presented fully by the adoption of e-procurement, a promotion drive should be implemented where the system will be outlined clearly, and its benefits should be explained fully to SMME owners. This must be done through ward workshops to reach all SMME owners throughout the Municipality.
- Facilities with internet should be made available for use by the SMME owners to access e-procurement system opportunities. The city should also embark on basic computer skills training to assist SMME owners to improve their businesses which would enhance the City's economy.
- The SMME owners need to familiarize themselves with regulations aimed at guiding the legality of transactions entered into through the e-procurement

system and the Municipality may have to inform SMME owners of these regulations.

5.10 Future research

Future research should examine the interventions by the eThekwini Municipality to uplift or assist SMME owners that are struggling with the adopted e-procurement system. While the present study was limited to SMME owners only a future study should also include the eThekwini Municipality employees that deal with the SMME owners and challenges they face from the system. The recommended study must be more aligned to quantitative research in order to be able to generalise the findings.

5.11 Chapter Summary

The adoption of e-procurement system by the eThekwini Municipality was initiated by the eThekwini Municipality and SMME owners follow the lead and procedures set by the City. The success or failure of the adoption of this system will depend on the eThekwini Municipality's commitment to the system in terms of investing more in research, development and improvement of the system.

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Annexures:



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**THE ADOPTION OF THE E-PROCUREMENT SYSTEM BY THE ETHEKWINI
MUNICIPALITY FOR SMME OWNERS: THE VIEWS OF SMALL MEDIUM AND
MICRO ENTERPRISE (SMME) OWNERS**

by

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A dissertation submitted in fulfilment of the requirements for the Degree

of

Master in Public Administration

School of Management, Information Technology and Governance, College of Law and
Management Studies

2018

Supervisor: Professor B Mubangizi

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I Perfect Siphelele Duma, student number 9705993 declare that:

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