

**AN EMPIRICAL ANALYSIS OF LOCAL GOVERNMENT DOCUMENT
MANAGEMENT SYSTEMS USING CONSTRUCTS OF THE TECHNOLOGY
ACCEPTANCE MODEL(TAM) AND TOTAL QUALITY MANAGEMENT (TQM)
ACROSS SELECTED CLUSTERS IN THE ETHEKWINI METROPOLITAN
MUNICIPALITY IN KWAZULU-NATAL, SOUTH AFRICA**

By

VARTHARAJ CHETTY

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SUPERVISOR: Professor T. Mgutshini

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**AN EMPIRICAL ANALYSIS OF LOCAL GOVERNMENT DOCUMENT MANAGEMENT
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CLUSTERS IN THE ETHEKWINI METROPOLITAN MUNICIPALITY IN KWAZULU-
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degree of Doctor of Philosophy in Management Sciences in
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University of Technology

VARTHARAJ CHETTY

MAY 2021

Supervisor:

Date: 23/04/2021

DEDICATION

In Humble Submission to Om Namah Shivaya and Mother Saraswathi

Student Number: 21600009

STUDENT DECLARATION

I declare that the study titled **“An Empirical Analysis of Municipality Document Management Systems using constructs of the Technology Acceptance Model (TAM) and Total Quality Management across Selected Clusters in the eThekweni Metropolitan Municipality in KwaZulu-Natal, South Africa.”** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

VARTHARAJ CHETTY

Date: 11 March 2020

APPROVED FOR SUBMISSION

SUPERVISOR

PROFESSOR T. MGUTSHINI

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ABSTRACT

Background:

Document management processes represent a key consideration in business success and quality management. There is ongoing pressure for the public sector to embrace these tools to increase efficiencies, reduce cost, waste and more significantly upholding their mandate of improved services to its citizenry. The development of innovative document management systems may offer a potential strategic advantage for businesses whose running costs and business activities centrally depend on the management of documents

Aim/ Purpose: - The fundamental aim of the study was to conduct an appraisal of local government document management systems using the constructs of the Technology Acceptance Model (TAM) in order to evaluate their impact on Total Quality Management (TQM) in selected clusters across eThekweni Municipality in Kwa-Zulu Natal, South Africa.

Setting:

South Africa comprises of nine provinces, one of which is KwaZulu-Natal, located on the east coast of South Africa. The eThekweni Municipality consists of a diverse society confronted with various social, economic, environmental and governance challenges.

Methodology - An exploratory sequential mixed method comparative case study design described the study's methodology.

The study was based on the combination of a desktop review; semi-structured exploratory individual interviews (n=45) with executive and strategic employees within the municipality; focus group discussions (n=2) and a quantitative online survey(n=186).

Data collection and data analysis methods:

All the data collected from the qualitative processes for example, the focus group discussions and the individual interviews were analysed using a hybrid of approaches.

Emergent themes and variables on interest were explored further via an online survey that was based on a quantitative design

Findings:

The current study utilised a combination of TQM and TAM analyses of different document management systems and engagement with key personnel to develop a model to support the uptake of new document management systems. Primarily, political, technological and socio-cultural factors were found to have contributed in influencing whether or not, employees take up a newly introduced DMS.

Conclusion and Implications for practice: - The South African context creates a unique dynamic and, for that reason, traditional westernised models related to technology acceptance were found inadequate.

DEFINITION OF RELEVANT TERMS

Municipality, Local Authority and Local Government

Prevalent in literature and legislation these concepts are used interchangeably. In this current study, municipality in terms of Merriam Webster Dictionary is “a primarily urban political unit having corporate status and usually powers of self-government”.

Metropolitan Area

Wikipedia describes Metropolitan Area as a region consisting of a densely populated urban core and its less-populated surrounding territories, sharing industry, infrastructure and housing.

Document Management Systems (DMS)

Often referred to as DMS, this is the use of computer systems and software to store, manage and track electronic documents and electronic images of paper.

Electronic Records Management Systems (ERMS)

An Electronic Records Management System is a computer programme or set of programmes designed to track and store records.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology.

Total Quality Management (TQM)

This is a system of management based on the principle that every member of staff must be committed to maintaining high standards of work in every aspect of a company's operations.

Electronic Document and Records Management Systems (EDRMS)

Electronic Document and Records management system is a type of content management system and refers to the combined technologies of document management and records management systems as an integrated system.

Clusters (Municipality)

Government clusters are groupings of government departments with cross cutting programmes. Clusters foster an integrated approach to Governance that is aimed at Improved Service Delivery.

LIST OF ACRONYMS

DMS	Document Management Systems
EDMS	Electronic Document Management Systems
EDRMS	Electronic Document Records Management Systems
EXCO	Executive Committee
ICT	Information and Communication Technology
IDP	Integrated Development Plan
IRMS	Integrated Records Management Service
NARS	National Archives Record Services
RM	Records Management
TAM	Technology Acceptance Model
TQM	Total Quality Management
TRA	Theory of Reasoned Action

LIST OF ANNEXURES

APPENDIX 1: SEMI-STRUCTURED INTERVIEW SCHEDULE

APPENDIX 2: QUESTIONNAIRE

APPENDIX 3: FOCUS GROUP DISCUSSION SCHEDULE

APPENDIX 4: GATE KEEPER'S LETTER

APPENDIX 5: EDITOR'S CERTIFICATE

APPENDIX 6: SUMMARY OF STUDIES

TABLE OF CONTENTS

DEDICATION.....	I
STUDENT DECLARATION	II
ACKNOWLEDGEMENTS	III
ABSTRACT	IV
DEFINITION OF RELEVANT TERMS.....	VI
LIST OF ACRONYMS.....	VIII
LIST OF ANNEXURES.....	IX
TABLE OF CONTENTS.....	X
LIST OF TABLES.....	XVI
LIST OF FIGURES.....	XVII
CHAPTER ONE	1
1.1 INTRODUCTION	1
1.2 BACKGROUND TO THE RESEARCH PROBLEM	3
1.2.1 <i>The Utility of Documents within business organisations.....</i>	3
1.2.2 <i>Context of the Study - Geography, Demography and Administrative.....</i>	4
1.2.3 <i>Functionalising South African Government and Document Management Processes.....</i>	6
1.2.4 <i>Local Government</i>	7
1.2.5 <i>Functions and Powers.....</i>	7
1.2.6 <i>Strategic Management Team</i>	10
1.3 STATEMENT OF THE RESEARCH PROBLEM	11
1.4 THE PURPOSE OF THE STUDY.....	13
1.5 THE OBJECTIVES OF THE STUDY	13
1.6 OVERVIEW OF THE STUDY'S METHODOLOGY	14
1.6.1 <i>Population\target population</i>	15
1.6.2 <i>Sampling method</i>	16
1.6.3 <i>Data analysis.....</i>	17
1.6.4 <i>Pretesting.....</i>	17
1.6.5 <i>Delimitations/scope.....</i>	18
1.6.6 <i>Limitations (optional)</i>	18
1.6.7 <i>Validity and reliability/trustworthiness (qualitative research).....</i>	18
1.7 SIGNIFICANCE OF THE STUDY	19
1.8 THE UNIQUE CONTRIBUTION MADE TO THE RESEARCH AREA.....	19
1.9 ETHICAL CONSIDERATIONS	20
1.9.1 <i>Disclosure of information.....</i>	21
1.9.2 <i>Anonymity and confidentiality.....</i>	21
1.10 STRUCTURE OF THE STUDY.....	21
1.11 SUMMARY	23
CHAPTER TWO	24

THE LITERATURE REVIEW	24
2.1 INTRODUCTION	24
2.2 LITERATURE REVIEWS AND THEIR PURPOSE	24
2.2.1 Literature Review Typologies	25
2.3 THE PROCESS OF UNDERTAKING A REVIEW	28
2.4 FORMAT OF REVIEW	31
2.5 DATA SEARCH STRATEGY	31
2.6 INCLUSION AND EXCLUSION CRITERIA	32
2.6.1 Inclusion criteria	32
2.6.2 Exclusion criteria	33
2.7 AN OVERVIEW OF THE VALUE OF ELECTRONIC DOCUMENT MANAGEMENT	34
SYSTEMS – DEBATES ABOUT PAPER-BASED AND ELECTRONIC OPTIONS.	34
2.8 THEORETICAL CONTRIBUTIONS TO UNDERSTANDING TECHNOLOGY	36
ACCEPTANCE – A BRIEF OVERVIEW OF SEMINAL CONTRIBUTIONS.	36
2.9 ADDITIONAL KEY INFLUENCING FACTORS IN TECHNOLOGY ADOPTION	47
2.10 SUMMARY OVERVIEW OF HIGHLIGHTED FACTORS RELATED TO	48
TECHNOLOGY ACCEPTANCE	48
2.11 REVIEW OF LOCAL POLICY CONTEXT	49
2.12 SUMMARY	54
CHAPTER THREE	55
THEORETICAL AND CONCEPTUAL FRAMEWORK	55
3.1 INTRODUCTION	55
3.2 THE TECHNOLOGY ACCEPTANCE MODEL (TAM): A CONCEPTUAL OVERVIEW	58
3.3 TOTAL QUALITY MANAGEMENT THEORY (TQM): A CONCEPTUAL OVERVIEW.	65
3.3.1 Development of TQM theory	66
3.4 A SUMMATIVE OVERVIEW OF KEY ELEMENTS OF TOTAL QUALITY	68
MANAGEMENT	68
3.5 AN INTEGRATED MODEL FOR TOTAL QUALITY MANAGEMENT	70
3.6 APPLICATION THE THEORETICAL FRAMEWORK IN THIS STUDY	72
3.7 SUMMARY	73
CHAPTER FOUR	74
RESEARCH DESIGN AND METHODOLOGY	74
4.1. INTRODUCTION	74
4.2. RESEARCH PROBLEM	75
4.3. PRIMARY AIM AND OBJECTIVES OF THE STUDY	75
4.4. RESEARCH CONTEXT	76
4.5. RESEARCH PARADIGM	77
4.5.1. Positivism (associated with Quantitative Research)	78
4.5.2. Interpretivism (associated with interpretative phenomenology)	78
4.5.3. Constructivism (associated with qualitative enquiry)	79
4.5.4. Pragmatism (Associated with mixed method research)	79
4.6. RESEARCH DESIGN	80
4.7. MIXED METHODS RESEARCH	80

4.7.1. Purpose and Characteristics of Mixed Methods Research	81
4.8. METHODOLOGY	82
4.9 PROCEDURES FOR THE IDENTIFICATION AND SELECTION OF STUDY PARTICIPANTS.....	84
4.9.1. Study Population	84
4.9.2. The Organisational Organogram	85
4.10. THE SAMPLING PLAN.....	87
4.10.1. Phase 1 Sampling plan (focus group discussions and individual interviews).....	87
4.10.2. Phase Two Sampling Plan (Focus Group Discussions and Individual Interviews)	89
4.10.3. Phase Three – The Quantitative Survey – Sampling Procedures.....	89
4.11. DATA COLLECTION STRATEGIES.....	90
4.11.1. Phase Two: Qualitative Data Collection via Individual interviews and Focus Group Discussions.....	91
4.12 FACILITATION OF THE INTERVIEWS	94
4.14 THE INTERVIEW PROCEDURE	95
4.15 FACILITATION OF FOCUS GROUPS	95
4.15.1 RECORDING AND TRANSCRIPTION	96
4.15.2 Determining the number of Focus Groups that were needed	97
4.16 LEVEL OF MODERATOR INVOLVEMENT	98
4.17 ADVANTAGES AND DISADVANTAGES THAT EMERGED FROM USING FOCUS GROUP DISCUSSIONS.	99
4.17.1 Limitations of using Focus Groups.....	99
4.18 QUALITATIVE PHENOMENOLOGICAL DATA ANALYSIS	100
4.19 OVERVIEW OF METHODOLOGICAL ISSUES RELATED TO THE QUANTITATIVE PHASE OF THE STUDY	101
4.20 THE USE OF A SURVEY AS A DATA COLLECTION METHOD.....	102
4.21 QUESTIONNAIRE AS A MEASUREMENT INSTRUMENT WITHIN THE SURVEY	102
4.21.1 The Design of the Questionnaire	103
4.21.2 An assessment of benefits and limitations associated with the survey	104
Methodology.....	104
4.22 DATA ANALYSIS.....	105
4.22.1 An overview of the T –Test.....	105
4.22.2 Cronbach Alpha Co-Efficient	105
4.23. TRUSTWORTHINESS OF THE QUALITATIVE PHASES OF THE STUDY	106
4.23 RESEARCH ETHICS/ ETHICAL CONSIDERATIONS	107
4.24 SIGNIFICANCE OF THE STUDY	109
4.25 LIMITATIONS OF THE STUDY.....	109
4.26 SUMMARY	110
CHAPTER FIVE	111
DATA PRESENTATION, DATA ANALYSIS AND INTERPRETATION	111
5.1 INTRODUCTION	111
5.2 OVERVIEW OF CONTEXT FOR DATA COLLECTION AND MANAGEMENT	112
5.3 SAMPLE CHARACTERISTICS	112
5.4 AGE.....	113
5.5 GENDER	114
5.6 RACIAL BACKGROUND	115
5.7 TYPE OF MANAGERIAL ROLE	116
5.8 LEVEL OF EDUCATION	117
5.9 YEARS OF SERVICE.....	118

5.10 SAMPLE SELECTION FOR THE FOCUS GROUP DISCUSSIONS	119
5.11 OVERVIEW OF KEY FINDINGS FOR THE STUDY	119
5.12 SEMI-STRUCTURED INTERVIEWS	122
5.13 RANGE OF DOCUMENT MANAGEMENT SYSTEMS IN USE WITHIN PARTICIPANT'S WORK AREAS.....	122
5.14 INSIGHTS INTO PARTICIPANTS' CONCEPTIONS OF QUALITY WITH RESPECT TO DOCUMENT MANAGEMENT SYSTEMS	124
5.15 EDUCATION/TRAINING AND DEVELOPMENT AS CONTRIBUTING FACTORS TO READINESS IN ACCEPTING NEW MODES OF WORKING	127
5.15.1 Participants' preferences (and rationale) in relation to selection of document management system ..	129
5.15.2 Factors related to quality and usability of document management system	131
5.15.3 Feedback from the Focus Group Discussions	133
5.16 EMERGENT THEMES AND DISCUSSION FOCUS AREAS WITHIN THE FOCUS GROUP DISCUSSIONS	134
5.16.1 IMPORTANT QUALITY CONSIDERATIONS IN SYSTEM CHOICE.....	134
5.16.2 Cost as a determining factor in choice of Document management system	137
5.16.3 System Security as a determining factor in choice of DMS.....	139
5.16.4 Perceived Ease of Use as a determining factor in choice of DMS.....	140
5.16.5 Perceived Usefulness as a determining factor in choice of DMS.....	141
5.16.6 Key Quality improvement factors.....	142
5.16.7 Perceptions about strategy focus areas and their influence on technology adoption	143
5.17 CENTRALISED, COMPREHENSIVE FOCUSED ICT STRATEGY THAT WILL IMPACT SERVICE DELIVERY POSITIVELY.	145
5.17.1 Strategic Human Resource Management (Change Management including Recruitment, Selection, Retention and Talent Management, Culture).....	145
5.17.2 Transparent, effective Supply Chain Management -Processes	146
5.18 FINDINGS FROM THE ONLINE SURVEY	146
5.19 SAMPLE CHARACTERISTICS FOR THE ONLINE SURVEY	147
5.19.1 Racial distribution of respondents.....	147
5.19.2 Age distribution of survey respondents	147
5.19.3 Respondents' Level of Education.....	148
5.19.4 Occupational Position of Respondents within the Municipality.....	149
5.19.5 Respondents' years of employment within the Municipality.....	150
5.19.6 Respondents' self- Assessed IT competence	151
5.20 RESPONDENTS' FEEDBACK ON INFLUENCES THAT CONTRIBUTE TO USER DECISIONS ABOUT WHETHER OR NOT TO UTILISE A NEWLY INTRODUCED DOCUMENT MANAGEMENT SYSTEM.....	152
5.20.1 Attitude Towards Use	153
5.20.2 Perceived Cost	155
5.20.3 Perceived Ease of Use	157
5.20.4 Perceived Usefulness	159
5.21 SATISFACTION AND ENJOYMENT	161
5.22 SUBJECTIVE NORMS	162
5.23 BEHAVIOURAL CONTROL.....	164
5.24 PERCEIVED SECURITY	166
5.25 PERCEIVED RISK	168
5.26 PERCEIVED COMPATIBILITY	170
5.27 INDIVIDUAL MOBILITY.....	172

5.28 PERSONAL INNOVATIVENESS.....	174
5.29 SUMMATIVE OVERVIEW OF KEY FINDINGS	176
5.30 SUMMARY	179
CHAPTER SIX THEORY DEVELOPMENT	181
6.1. INTRODUCTION	181
6.2. SCIENCE, SCIENTIFIC RESEARCH AND THE SCIENTIFIC METHOD	182
6.2.1. <i>Basic and Applied Science</i>	183
6.2.2 <i>Scientific Research/ Knowledge</i>	184
6.2.3 <i>Research Strategies to Theory Development</i>	185
6.2.4 <i>The Scientific Method</i>	191
6.3. A BRIEF GUIDE TO ONTOLOGY, EPISTEMOLOGY AND PHILOSOPHICAL PERSPECTIVES.....	193
6.4. THE DEFINITION AND NATURE OF THEORY (AN EPISTEMOLOGICAL VIEW)	198
6.5. RELATIONSHIP BETWEEN THEORY AND RESEARCH	201
6.6. BUILDING BLOCKS OF THEORY.....	203
6.7. ATTRIBUTES OF A GOOD THEORY	204
6.7.1 <i>Evidential Virtues</i>	206
6.7.2 <i>Coherential Virtues</i>	206
6.7.3 <i>Aesthetic virtues</i>	206
6.7.4 <i>Diachronic virtues</i>	207
6.8. CRITERIA OF EVALUATION	207
6.9. STRENGTHS AND LIMITATIONS OF THEORY BUILDING	208
6.9.1. <i>Limitations</i>	208
6.9.2. <i>Strengths</i>	209
6.10 PROPOSED SPECIFICATION FRAMEWORK FOR CURRENT STUDY	209
6.10.1 <i>Strategic priorities that relate to the identification and utilisation of specific document management options</i>	209
6.10.2 <i>Strategic Priorities that influence technology acceptance as applied to each of the identified document management processes within eThekwini</i>	211
6.10.3. <i>Commentary and Critique- Proposed Specification Framework</i>	214
<i>Contribution of the framework to the understanding of the research area</i>	214
6.10.4 <i>How does it Relate to the existing understanding of the Study?</i>	214
6.10.5 <i>Unexpected issues that are looked at within the framework</i>	216
6.11 LIMITATIONS AND CAUTIONS ABOUT THE USE OF THE THEORY	217
6.12 FURTHER DEVELOPMENT BY FUTURE RESEARCHERS	218
6.13 SUMMARY	218
CHAPTER SEVEN RECOMMENDATIONS AND CONCLUDING REMARKS.....	220
7.1 INTRODUCTION	220
7.2 FINDINGS AND RECOMMENDATIONS	227
7.3 DESKTOP REVIEW	227
7.4 QUALITATIVE SEMI -STRUCTURED INTERVIEWS.....	228
7.5 INSIGHTS INTO PARTICIPANTS CONCEPTION OF QUALITY WITH RESPECT TO DMS	230
7.6 EDUCATION /TRAINING AND DEVELOPMENT AS CONTRIBUTING FACTORS TO READINESS IN ACCEPTING NEW MODES OF WORKING	230
7.7 FACTORS RELATED TO QUALITY AND USABILITY OF DOCUMENT MANAGEMENT SYSTEMS.....	231

7.8 FOCUS GROUP DISCUSSION	231
7.9 IMPORTANT QUALITY CONSIDERATION IN SYSTEM CHOICE.....	232
7.9.1 <i>Cost as A Determining Factor in Choice Of DMS</i>	232
7.9.2 <i>System Security as a determining factor in choice of DMS</i>	233
7.9.3 <i>Perceived Ease of Use</i>	233
7.9.4 <i>Perceived Usefulness as a determining factor in choice of DMS</i>	234
7.10 KEY QUALITY IMPROVEMENT FACTORS	234
7.11 QUANTITATIVE ONLINE SURVEY FINDINGS.....	235
7.12 RECOMMENDATIONS	237
7.13 CONCLUSION	239
REFERENCES	241
ANNEXURES	254

LIST OF TABLES

TABLE 2. 1 TYPES OF REVIEWS (SOURCE: AUTHOR’S OWN, 2019)	25
TABLE 3. 1 SIX COMPONENTS TO TQM (SOURCE: AUTHOR’S OWN, 2019)	69
TABLE 4. 1 SUMMARY OVERVIEW OF SAMPLING APPROACHES USED FOR PHASE 2 OF THE STUDY (SOURCE: AUTHOR’S OWN, 2019)	89
TABLE 4. 2 TERMINOLOGY AND CRITERIA USED TO EVALUATE THE CREDIBILITY OF RESEARCH FINDINGS (SOURCE: NOBLE AND SMITH 2014)	92
TABLE 5. 1 SUMMARY OVERVIEW OF DIFFERENT MANAGEMENT SYSTEMS (SOURCE: AUTHOR’S OWN, 2019)	120
TABLE 5. 2 SPECIFIED QUALITY AND KEY PERFORMANCE CONSIDERATION (SOURCE: AUTHOR’S OWN, 2019)	135
TABLE 5. 3 ATTITUDE TOWARDS USE (SOURCE: AUTHOR’S OWN, 2019)	154
TABLE 5. 4 PERCEIVED COST (SOURCE: AUTHOR’S OWN, 2019)	156
TABLE 5. 5 PERCEIVED EASE OF USE (SOURCE: AUTHOR’S OWN, 2019)	158
TABLE 5. 6 SUMMATION OF PERCEIVED USEFULNESS (SOURCE: AUTHOR’S OWN, 2019).....	160
TABLE 5. 7 SATISFACTION AND ENJOYMENT (SOURCE: AUTHOR’S OWN, 2019)	161
TABLE 5. 8 RESPONSES ON SUBJECTIVE NORMS (SOURCE: AUTHOR’S OWN, 2019).....	163
TABLE 5. 9 RESPONSES ON BEHAVIOURAL CONTROL (SOURCE: AUTHOR’S OWN, 2019).....	165
TABLE 5. 10 RESPONSES ON PERCEIVED SECURITY (SOURCE: AUTHOR’S OWN, 2019)	167
TABLE 5. 11 ASSESSING PERCEIVED RISK (SOURCE: AUTHOR’S OWN, 2019)	169
TABLE 5. 12 PERCEIVED COMPATIBILITY (SOURCE: AUTHOR’S OWN, 2019)	171
TABLE 5. 13 INDIVIDUAL MOBILITY (SOURCE: AUTHOR’S OWN, 2019)	173
TABLE 5. 14 RESPONSES TO PERSONAL INNOVATIVENESS (SOURCE: AUTHOR’S OWN, 2019).....	175
TABLE 6 1 OVERVIEW OF PARADIGMS (SOURCE: SALMA PATEL, 2015).....	196

LIST OF FIGURES

FIGURE 1. 1 ETHEKWINI SPATIAL CONTEXT (SOURCE: MUNICIPAL DEMARCATION BOARD, 2016)	5
FIGURE 1. 2 ETHEKWINI SPATIAL DISTRIBUTION (SOURCE: SA, 2011).....	6
FIGURE 1. 3 ORGANISATIONAL STRUCTURE	10
FIGURE 1. 4 STUDY'S METHODOLOGY (SOURCE: AUTHOR'S OWN, 2019)	14
 FIGURE 2. 1 SACKETT'S ORIGINAL HIERARCHY (SOURCE: SACKETT'S, 1996)	29
 FIGURE 3. 1 DAVIS' ORIGINAL THEORY OF TECHNOLOGY ACCEPTANCE (SOURCE: DAVIS, 1986).....	60
FIGURE 3. 2 FIRST MODIFIED VERSION OF TECHNOLOGY ACCEPTANCE MODEL (TAM) (SOURCE: DAVIS, BOGOZZI AND WARSHAW 1989)	61
FIGURE 3. 3 THEORY OF REASONED ACTION (TRA) (SOURCE: FISHBEIN & AZJEN,1975)	62
FIGURE 3. 4 S-SHAPED CURVE (SOURCE: ROGERS, 1995)	64
FIGURE 3. 5 THE UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT). (SOURCE: VENKATESH, MORRIS & DAVIS ,2003)	65
FIGURE 3. 6 THE HOUSE OF TOTAL QUALITY MODEL (SOURCE: VOEHL, 1992)	71
 FIGURE 4. 1 MAP OF ETHEKWINI (SOURCE: ETHEKWINI MUNICIPALITY IDP, 2019)	77
FIGURE 4. 2 THE STUDY STAGES (SOURCE: AUTHOR'S OWN, 2019).....	83
FIGURE 4. 3 ORGANISATIONAL STRUCTURE (SOURCE: ETHEKWINI MUNICIPALITY IDP, 2017)	86
 FIGURE 5. 1 AGE PARTICIPANTS BY DISTRIBUTION (SOURCE: AUTHOR'S OWN, 2019)	113
FIGURE 5. 2 DISTRIBUTION OF PARTICIPANTS BY GENDER (SOURCE: AUTHOR'S OWN, 2019).....	114
FIGURE 5. 3 RACIAL BACKGROUND OF PARTICIPANTS (SOURCE: AUTHOR'S OWN, 2019)	115
FIGURE 5. 4 TYPE OF MANAGERIAL INVOLVEMENT OF PARTICIPANTS (SOURCE: AUTHOR'S OWN, 2019)	116
FIGURE 5. 5 PARTICIPANTS' LEVEL OF EDUCATION (SOURCE: AUTHOR'S OWN, 2019)	117
FIGURE 5. 6 YEARS OF SERVICE WITHIN THE COUNCIL OF PARTICIPANTS (SOURCE: AUTHOR'S OWN, 2019).....	118
FIGURE 5. 7 RESPONDENTS BY RACE (SOURCE: AUTHOR'S OWN, 2019)	147
FIGURE 5. 8 PARTICIPANTS AGE (SOURCE: AUTHOR'S OWN, 2019)	148
FIGURE 5. 9 HIGHEST EDUCATION LEVEL (SOURCE: AUTHOR'S OWN, 2019)	149
FIGURE 5. 10 POSITION WITHIN THE MUNICIPALITY (SOURCE: AUTHOR'S OWN, 2019)	150
FIGURE 5. 11 NUMBER OF YEARS EMPLOYED IN ETHEKWINI (SOURCE: AUTHOR'S OWN, 2019)	150
FIGURE 5. 12 RESPONDENTS' SELF ASSESSED IT COMPETENCE (SOURCE: AUTHOR'S OWN, 2019)	152
 FIGURE 6. 1 INDUCTIVE APPROACH TO RESEARCH (SOURCE: AMY BLACKSTONE, 2014)	186
FIGURE 6. 2 THE INDUCTIVE APPROACH TO RESEARCH (BOTTOM UP) (SOURCE: AMY BLACKSTONE, 2014)	187
FIGURE 6. 3 THE INDUCTIVE APPROACH TO RESEARCH (HILL CLIMBING) (SOURCE: MALHOTRA, 2017)	188
FIGURE 6. 4 INDUCTIVE APPROACH TO RESEARCH (SOURCE: AMY BLACKSTONE, 2014)	189
FIGURE 6. 5 DEDUCTIVE APPROACH TO RESEARCH (SOURCE: ANMOL BHATTACHARJEE, 2008)	190
FIGURE 6. 6 DEPICTION OF CONCLUSION (SOURCE: MALHOTRA, 2017)	190
FIGURE 6. 7 DEDUCTIVE APPROACH TO RESEARCH (SOURCE: AMY BLACKSTONE, 2014).....	191
FIGURE 6. 8. RESEARCH CIRCLE (SOURCE: GAY, WEAVER, 2011)	202
FIGURE 6. 9. DOCUMENT MANAGEMENT SYSTEM (SOURCE: AUTHOR'S OWN, 2019)	213

CHAPTER ONE

1.1 INTRODUCTION

Business-running costs have increasingly become the make or break factor in business survival (Calloway 2010; Plimmer & Apperley 2007). Studies of business such as Carr (2005); Djassemi & Sena (2006) and Shaffer (2013) have all encouraged the need for streamlining of business functions as one the critical first steps that businesses should take with respect to cost management. In South Africa, the works of Cloete (2003) and Gaffoor and Cloete (2010) have been of seminal importance in specifying the use of user-friendly, state-of-the-art electronic policy support tools to promote more successful strategic policy assessment that, in turn, will improve sustainable service delivery outcomes in the public sector. One area of business function that has received varied attention relates to the strategic adoption of various document management systems as efficiency and cost management tools. Strategic decision-making in this regard needs to be understood in terms of evidenced technology acceptance constructs and also with respect to the role played by document management in total quality management.

Notably, within public services, the debates about the acceptance of different document management systems have focused on a range of issues including – cost efficiency, environmental sustainability, quality management and efficient business function (Gilani 2009 and Kunis 2007). With respect to cost efficiency, Liu and Stork 2000 and Vallis (2009) argue that document management options can result in anything from 10 percent to 50 percent of total cost wastage. Liu and Stork (2000) and Vallis (2009) further argue that document management related wastage within public services could be the primal causal factor for business failure. Recent years have seen the increasing prioritisation of concerns about environmental sustainability and within business, document management processes represent the single most cited threat to environmental sustainability (Gnoni & Elia 2013; Arney *et al.* 2013). So significant is this aspect, that Larrán and Andrades (2015) cite the environmental compliance of public services as the foremost important consideration that should be made when selecting document management options. With this and other related observations, document management has become an incremental challenge for policy makers and employers, primarily because of the growing acknowledgement that inadequate

provisions and poor document management can even result in potential of breaches

in security. Allarding and Schmeck (2011) carried out a countrywide study of organisations in the USA and concluded that many organisations are overwhelmed by paper and estimated that there are 318 billion paper documents on file, with 92 billion new pages added each year. Computers print 775 billion pages each year.

A range of document management system alternatives have been widely introduced globally (ranging from print-based, hybrid and paperless) but their success and usage patterns is varied because of the differing conditions under which each has been implemented. Global reports of business running costs suggest that poorly evidenced document management systems can increase running cost wastage for companies by anything from 15 percent to 65 percent of the total business running cost when compared to evidenced options and in the main, these cost differences can be the fine-line between the survival or demise of a business entity (Helmer 2012; Plimmer & Apperley 2007). By the same token, environmental sustainability of different document management processes represents an important consideration in business success and quality management.

Some, including Jones (2012) and Marton & Choo (2012) suggest that strategic decisions related to, choice, usage and overall quality contribution of document management systems within business has its historical roots, in the total quality management discourse and constructs related to technology acceptance. Coined in 1985 by the USA navy, the theory of Total Quality management (TQM) is conceptualised.

“As a set of strategies for continuously improving performance at every level, and in all areas of responsibility. It combines fundamental management techniques, existing improvement efforts, and specialized technical tools under a disciplined structure focused on continuously improving all processes. Improved performance is directed at satisfying such broad goals as cost, quality, schedule, and mission need and suitability. Increasing user satisfaction is the overriding objective (Porter 1996:23). Duran (2014) sees this as performance improvement efforts across nine distinct categories including: (1) Leadership, (2) Strategy, (3) Customers, (4) Measurement, (5) Analysis, (6) knowledge management, (7) Workforce, (8) Operations and (9) Results. To this end, Total Quality Management (TQM) represents a critical framework the evaluative processes within the proposed study will be based. In other words, the

assessment of the differing document management processes will be guided by and report findings in terms of the concepts articulated within TQM. As an adjunct to TQM, constructs of the technology acceptance model (TAM) (AlShibly, 2014). Developed by Davis (1989), the model is posited on two beliefs i.e. it is the perceived usefulness and the perceived ease of application of emerging technologies that determine attitudes to their adoption (Davis 1989). The TQM and TAM act as important foundational theories whose tenets are integrated into the proposed study. Critically, the background theories focus on a strategic level and direct the proposed study focus toward that level of business operation.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

1.2.1 THE UTILITY OF DOCUMENTS WITHIN BUSINESS ORGANISATIONS

Documents represent the single most universally utilised form of communication within businesses (Djassemi & Sena 2006; Gupta 2015 and McCormack 2011) but recent years have seen an increasing reliance on paperless or e-based alternatives. As far back as the early 1900s, the primary mode of record keeping, and information sharing has been paper-based alternatives but since the 1990s, there have been growing concerns about cost, a general lack of energy efficiency and the overall, environmental damage that comes from the use paper-based document management systems. (Carr 2005; Desk 2010) allude to this observation and point to further inefficiencies that are associated with traditional document management processes and herein, point to the need for the adoption of contemporary, more environmentally sustainable options. Many industries and areas of work have, developed the new-technology options progressively and in turn, traditional alternatives such as print-based document management systems have been inversely impacted. In the USA, there are documented successes such as that achieved by utilities companies (Shaffer 2013) who diversified their operations by introducing paperless processing of invoices without manual intervention, E-invoicing and building a virtual real-time access to suppliers. Welsh (2007) analyses the introduction of alternative document management systems in the financial planning industry and notes various advantages to digitising documentation systems, including increased sales, improved employee morale and a reduction in operating costs. Also noted is the fact that these systems

provide easy-to-use search and retrieval features. This progressive view of e-based options is not shared universally in different industries and particularly within the developing world as evidenced in the work by Liu and Stork (2000) and Carr (2005) who found print-based or paper-based options to have unmatched advantages over newer alternatives. According to Liu and Stork (2000) and Desk (2010), the introduction of new technologies is best described as a dynamic interaction between old and new. New technologies can be incorrectly perceived as total replacements for old ones, when in fact the introduction of a new technology can stimulate a synergy between old and new. Davis' (1989) theory on the acceptance of new technology confirms that the tendency for the adoption of new processes is based on two considerations. i.e. the perceived usefulness and the perceived ease of application of the newly proposed application. A background literature review of evidence based on both primary and secondary literature notes that total quality management should be effected by assessing performance attributes across nine distinct categories including:

- (1) Leadership, (2) Strategy, (3) Customers, (4) Measurement, (5) Analysis, (6) knowledge management, (7) Workforce, (8) Operations and (9) Results (Weber 2011).

Guided by this, the current study will conduct a comparative analysis of the acceptance of document management systems in order to evaluate their impact on total quality management in selected municipalities in KwaZulu-Natal, South Africa.

1.2.2 CONTEXT OF THE STUDY - GEOGRAPHY, DEMOGRAPHY AND ADMINISTRATIVE SYSTEM OF KWAZULU-NATAL, SOUTH AFRICA

South Africa is made up of nine provinces, one of which is KwaZulu-Natal, located on the east coast of South Africa. Within KZN, eThekweni municipality spans an area of approximately 2 555 km² and in 2016, was home to 3.6 million people. The eThekweni Municipality is made up of a diverse society facing various social, economic, environmental and governance challenges.



Figure 1. 1 eThekweni Spatial Context (Source: Municipal Demarcation Board, 2016)

The population of eThekweni in 2001 was 3.09 million and has grown at an average annual percentage of 1.13% reaching 3.44 million in 2011 (Statistics South Africa, 2011). eThekweni's population is projected to increase from 413 6506 (2019) to 4446539 (2023) (Stats-SA, 2019). The estimation is that the female population will increase from 206 1014 (2019) to 2097639 (2020) while the male population will increase from 207 5493 (2019) to 2118092 (2020) (Stats-SA, 2019). The majority of the population is located in the central region and is the second largest in extent in the municipality. 23% (760 000 people) makes up the South of the total municipal population (STATS-SA, 2019). The figures below are indicative of the population breakdown per region in the municipality.

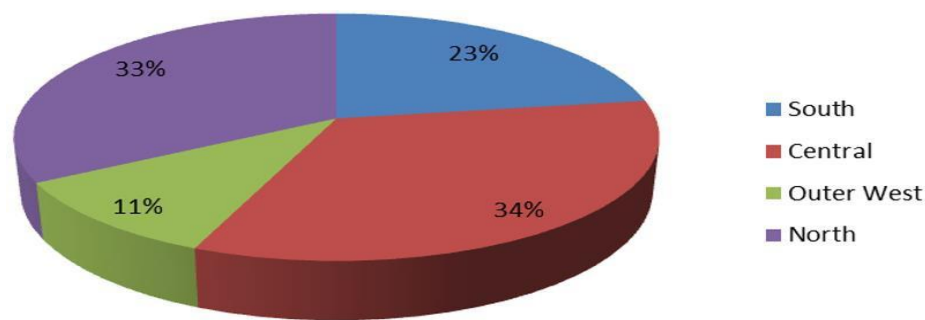


Figure 1. 2 eThekweni Spatial Distribution (Source: Stats SA, 2011)

Different ethnic groups make up the various municipal areas. The majority of the population is the African community (74%), this is followed by the Indian community (17%), the White community (7%), the Coloured community (2%), and 0.4% comprising other nationals (Stats-SA, 2019).

1.2.3 FUNCTIONALISING SOUTH AFRICAN GOVERNMENT AND DOCUMENT MANAGEMENT PROCESSES

The basic fundamentals of Government are developing and making policies and laws with regards the rights and responsibilities of its citizens and more importantly delivering services. Taxes which signify the collected revenue are used to provide for these services and infrastructure. The three spheres of government as mandated by the Constitution of South Africa are:

- National Government
- Provincial Government
- Local Government

For the sake of the current study the discussion will revolve around Local Government. It must be noted that “Local Government” or “Municipality” are both used interchangeably in this current study. Besides, it is common cause that municipalities are also referred as Local Governments.

1.2.4 LOCAL GOVERNMENT

South Africa is divided into local municipalities. These municipalities have a council where decisions are made. Municipal officials and staff are tasked with the responsibility of implementing the mandate of the municipality. There are three different types of municipalities:

1. Metropolitan Municipalities (Category A): Councillors are elected through a proportional representation ballot, where voting is for a party. The balance is elected by residents in each ward and are called ward counsellors. Metropolitan municipalities exist in Gauteng (City of Johannesburg), Cape Town (City of Cape Town), KZN (City of eThekweni), Tshwane (City of Tshwane), Port Elizabeth (Nelson Mandela Metropolitan Municipality), Bloemfontein (Mangaung Municipality), East London (Buffalo City) and East Rand (Ekurhuleni Metropolitan Municipality).
2. Local Municipality (Category B): Local municipalities are those areas that fall outside of the six metropolitan areas. There exists a total of 213 local municipalities and these are broken into wards which is represented by a ward counsellor. The ward counsellor represents the residents of that ward.
3. District Municipalities (Category C): A number of local municipalities that fall in one district make up district municipalities. This is usually made up of 4-6 local municipalities that come together. Two types of counsellors normally make up the district council. The elected councillors and counsellors who represent local municipalities in the area.

1.2.5 FUNCTIONS AND POWERS

1.2.5.1 Mayor

The chairperson of the executive committee is the mayor of the eThekweni Municipality. The duties of the mayor amongst others is to oversee the performance of the municipality with respect to the mandate. The mayor also performs ceremonial functions and exercises the powers delegated to the mayor by the municipal council or executive committee.

1.2.5.2 Executive Committee (Exco)

The executive committee comprises 12 members established by the municipal council. When and where Exco meets is decided by the Mayor. The composition of Exco is in such a way that parties and interests represented in the council are represented in Exco in the same proportion. This principle committee is tasked with receiving and discussing reports from other committees of council. Their recommendations and discussions are then forwarded to the full council where it can dispose of the matter in terms its delegated powers.

1.2.5.3 Portfolio Committees

The council has five committees supporting Exco where every councillor serves in at least one committee. Some members of the executive committee chair the portfolio committee. These committees are also advisory bodies to Exco. The portfolio committees are:

- Economic Developed and Planning Committee
- Community Services Committee
- Governance and Human Resources Committee
- Security and Emergency Services Committee
- Human Settlements and Infrastructure Committee

The commencement of the new council was in August 2016. The majority and key committees are functional, such as the portfolio committee, executive committee and council. Other committees upon finalisation of their membership are then functional.

In terms of the South African constitution, Section 211 recognises traditional leaders. As gazetted by COGTA KwaZulu-Natal, 14 traditional leaders may participate in eThekweni municipality council meetings.

1.2.5.4 Office of the Speaker

The municipal council must have a chairperson who is called the speaker and mandated by the Local Government Municipal Structures Act. At the councils first full

sitting, after the local government elections, the councillors elect the speaker. The speaker is tasked with the chairmanship and must ensure compliance with the councillor's code of conduct and the councillors' rules and orders. Another key function is the proper functioning of the legislative side of the council with regard legislative initiatives the speaker also ensures community participation. The speaker has ex-officio sitting in all committees of the council; however, the speaker has no voting rights.

1.2.5.5. Reporting Lines

The head of the municipal administration and accounting officer is the municipal manager. He or she reports to the council, Exco and Office Bearers (particularly the mayor and speaker).

The administration is organised as follows:

- Municipal manager with some office reporting directly to him or her
- Deputy municipal managers who reports to the municipal manager. These deputy municipal managers have defined strategic and line function responsibilities.
- Heads of Units who report to specific Deputy Municipal Managers; and
- Departments which report to Heads of Units

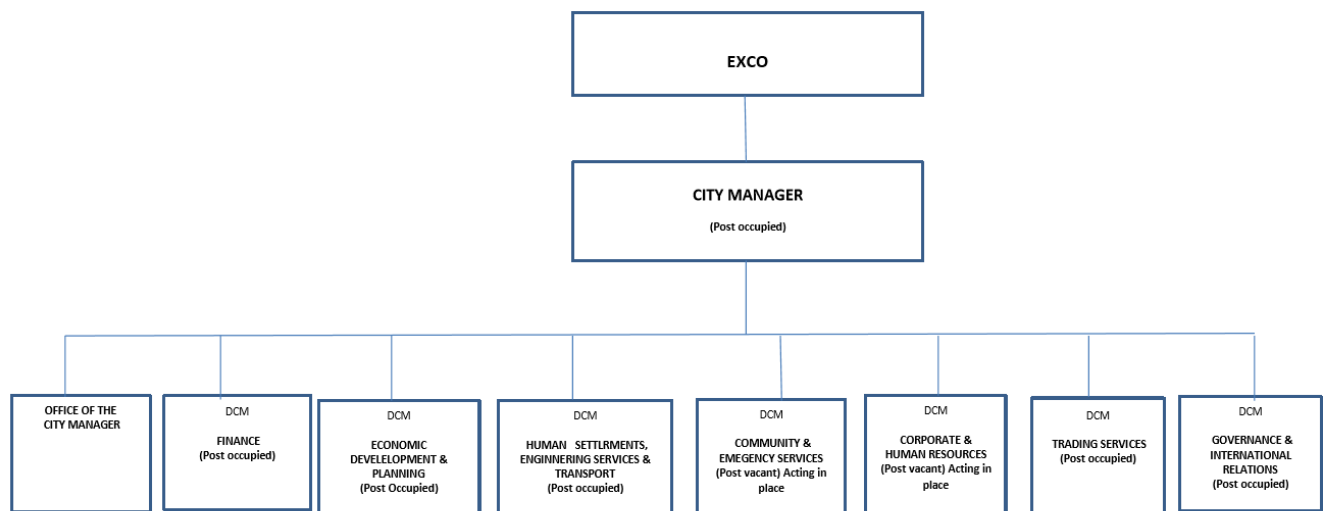


Figure 1: Organisational Structure
Source: eThekweni Municipality, 27/02/2019

Figure 1. 3 Organisational Structure

In addition to managing the Deputy Municipal Managers, the following five offices report to the Municipal Manager:

- Chief Audit including performance monitoring and evaluation
- Strategy office
- Information Management
- Chief Operations Office
- City Integrity and Investigations

Within the office of the Chief Strategy Officer, is the IDP office.

1.2.6 STRATEGIC MANAGEMENT TEAM

The Municipal manager and his deputy municipal managers comprise the strategic management team. The key role of deputy city managers is to drive and integrate programs across functional areas while heading up clusters.

Seven Deputy Municipal Managers head the following Portfolios:

- Governance and International Relations
- Economic Development and Planning
- Human Settlements
- Trading Services
- Community and Emergency Services
- Corporate and Human Resources; and
- Finance

1.3 STATEMENT OF THE RESEARCH PROBLEM

As noted by Kunis, Ronger and Schwind (2007:12),

document management has a decisive role in modern e-government applications. As today's authorities have to face the challenge of increasing the efficiency and quality while decreasing the duration of their government processes a flexible, adaptable document management system is needed for large e-government applications. (Kunis, Ronger and Schwind 2007:12).

Documents represent the single most universally utilised form of communication within businesses and their management is identified by some, as one of the top sources of financial wastage (Welsh, 2007) and (Department of Health and Hunt, 2013). Some, including Ugale, Patil and Musande, (2017) and David, Ngulube and Dube, (2013) have presented studies that show that up to 15% of fruitless expenditure within business is attributable to the mismanagement of document management systems especially within publicly run enterprises.

Notably, within public services, the debates about the acceptance of different document management systems have focussed on a range of issues including – cost efficiency, environmental sustainability, quality management and efficient business function (Gilani 2009 and Kunis 2007). With respect to cost efficiency, Liu and Stork (2000) and Vallis (2009) argue that document management options can result in anything from 10 percent to 50 percent of total cost wastage. Liu and Stork (2000) and

Vallis (2009) further argue that, document management related wastage within public services could be the primal causal factor for business failure. Recent years have seen the increasing prioritisation of concerns about environmental sustainability and within business, document management processes represent the single most cited threat to environmental sustainability (Arney, Jones & Wolf 2013; Gnoni & Elia, 2013)

Evidence has been consistent in illustrating a need for more evidence-based understanding of the problems associated with paper/document management systems as part of the wider agenda of increasing efficiencies and driving down operational costs. This is especially important within public entities because government reports from various contexts globally, show a growing lack of funds for the necessary operations and service provision that have direct impact on the wellbeing and the health of populations (McGrath, Griffin & Mundy 2016) and (McMullen 2011).

Beyond the wasteful expenditure and efficiency imperatives, the attention given to more effective management of documents has been equalled by growing concerns related to the environmental sustainability of paper-based document management systems. The use of paper within industry has been equated to millions of tons of deforestation and beyond the search for efficient document management options., there is a need for seeking out options that are not harmful to the environment. With this imperative clearly accepted by many including Al-Yahya and Panuwatwanich (2018), there have been significant efforts and debates across industry to determine how businesses can bring about greater efficiencies in the workplace, particularly with respect to the management of documents.

To this end, a number of non-paper document management systems have been integrated into several industries and most significantly, the uptake of these new alternatives has been varied and, in some cases, the acceptance of new technologies has been worryingly low. In South Africa, for example, (David, Ngulube & Dube, 2013) found that more than 13% of companies have introduced paperless document management systems but that most of intended targets of the change have not readily

accepted the change. This failure to adopt new technologies in spite of the many articulated benefits of moving toward e-based and paperless options has been cited as one of the significant challenges for employers and to date, there is limited evidence-based guidance to support the adoption of e-based document management systems. This unresolved challenge represents a significant problem for eThekweni Municipality, one that is deserving of empirical study. Emerging theory from the study has the potential for extrapolation to other similar contexts.

1.4 THE PURPOSE OF THE STUDY

The proposed study aims to conduct a comparative analysis of the acceptance of document management systems in order to evaluate their impact on total quality management in selected clusters in KwaZulu-Natal, South Africa.

1.5 THE OBJECTIVES OF THE STUDY

In facilitating the completion of the stated aim of the study, the following eight objectives were pursued within the empirical phase of the study:

1. To conduct a desktop review to identify and review alternative document management systems (nationally and internationally) as a first step toward identification of best practice.
2. To conduct a status analysis of primary processes within the municipality's administrative unit to determine the range of document management systems that are in operation.
3. To determine total quality performance of each of the identified document management systems within eThekweni using Duran's (2014) categories.
4. To assess and critically evaluate the factors that influence technology acceptance as applied to each of the identified document management processes within eThekweni.
5. To apply total quality management categorisation as the framework for exploring strategic priorities as they relate to the identification and utilisation of specific document management options.

6. To identify and critically assess the strategic priorities that influence technology adoption as it relates to, choice of document management processes within the municipality.
7. To develop a total quality and technology acceptance framework that describes the characteristics of an effective document management system.
8. To develop a theoretical framework and specification for an effective document management system for implementation within municipalities and other related public service areas.

1.6 OVERVIEW OF THE STUDY'S METHODOLOGY

An exploratory sequential mixed method comparative case study design described the study's methodology as depicted in Figure 4.1

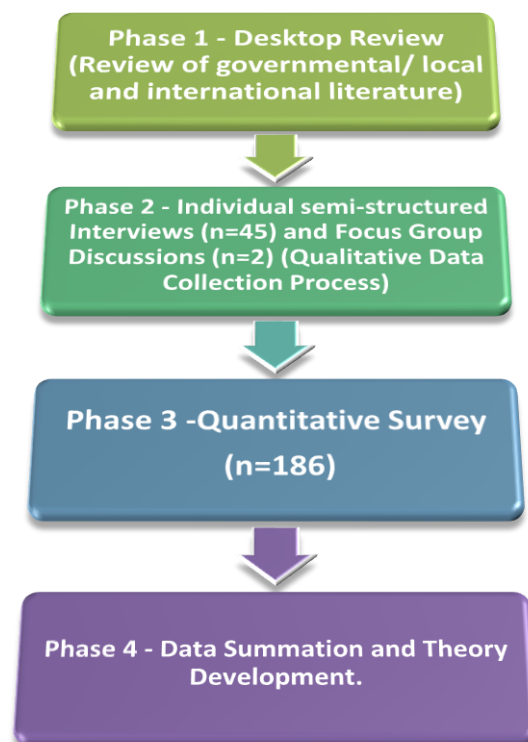


Figure 1.4 Study's Methodology (Source: Author's Own, 2019)

The study was based on the combination of a desktop review; semi-structured exploratory individual interviews (n=45) with executive and strategic employees within the municipality; focus group discussions (n=2) comprising 5 and 7 participants respectively and a quantitative survey (n=186), in which municipal executive employee participants provided experiential insights into the range of factors that have influenced technology acceptance of differing document management systems and they will provided insights into the range of impacts on 'total quality' that they have observed as a result of the use of differing document management systems.

Phase one data-collection was a desktop review of related data. Phase two was based on qualitative individual interviews (n=45) and focus group discussions (n=2). Phase-three of the study was a quantitative data collection phase (survey) based on variables elicited from the first Phase of the study. In this phase, an online survey was administered to a wide range of stakeholders to quantify the impacts of alternate document management systems to provide a statistical overview of relationships between identified impacts and influences arising from paperless and print-based document management systems. The final phase (phase four) of the study was focused on validating findings and any emerging theories were built on the basis of a combination of consensus focus group discussions and cross validation of emerging best practices with international literature and best practice. This ensured that the study's findings and recommendations are benchmarked with international standards in document management processes.

1.6.1 POPULATION\TARGET POPULATION

The eThekweni Municipality, with over 23 000 staff, has a number of operational divisions, one of which is the administrative unit whose primary functionality is to oversee and facilitate efficiency across the wider range of administrative processes that are central to the functions of the municipality. The current study focus was on strategic and executive management within the municipality. The Municipality employee complement presented 344 potential participants who could take part in the study. All the targeted participants were in roles within the municipality where they had strategic oversight over a range of policies including acting as decision makers with

respect to determining the choice and use of different document management systems.

1.6.2 SAMPLING METHOD

The target population of individuals who could be potential study participants comprised staff of eThekweni Municipality in strategic and executive roles across the municipality (n=344). Given the qualitative nature of Phase 2 of the study, non-probability sampling approaches were used in this preliminary aspect of the study. As such, quota sampling was used. Quota sampling is a non-probability sampling method, which takes account of participant representation by some specific requirement or predefined category (Parahoo 2009). In this study, it was important to ensure selection of participants includes members from each of the stakeholder categories. To ensure inclusion and representation of all the stakeholder categories in the data-collection process i.e. the Mayor, Councillor's; Municipality Exco and all other categories of strategic managers are included i.e. heterogeneous or maximum variation sampling will be utilized. This method of sampling ensures the inclusion of all stakeholder categories.

Individual Interviews included a total of 45 participants and these included the Mayor (n=1); Executive Committee (Exco)(n=3); Councillors (n=20); City Manager and deputy city managers (n=4); Heads of departments (n=7) and Deputy Heads of Departments (n=10). The proportions were determined by the researcher in line with the guidance within quota sampling. A total of 2 focus groups with 7 and 5 participants each were conducted. The focus groups included discussants identified randomly from the target population of 344 participants. The focus groups were made up exclusively of (i) heads and deputy heads of department (ii) City managers and deputy managers and (iii) Councillors. The above-described method ensured heterogeneity in the study group and is not intended to maximize representativeness as this is not a priority within qualitative research (Johnson & Onwuegbuzie 2012).

The sampling plan for the survey (Phase 3) was based on the following: -

- Parent / Source Population = 23000 employees employed by eThekweni and who utilise the services of the administration unit.
- Target Population = 344 respondents comprised of: Mayor (n=1); Executive Committee (Exco)(n=10); Councillors (n=206); City Manager (n=1); deputy city managers (n=6); Heads of departments (n=40) and Deputy Heads of Departments (n=80).

Simple randomised sampling was used to identify a representative sample of potential survey respondents from the parent or source population (n=23000). The sampling frame included Mayor (n=1); Executive Committee (Exco)(n=10); Councillors (n=206); City Manager (n=1); deputy city managers (n=6); Heads of departments (n=40) and Deputy Heads of Departments (n=80). which is a total of 344 potential respondents within the target population.

1.6.3 DATA ANALYSIS

All the data that was collected from the qualitative processes i.e. the focus group discussions and the individual interviews were analysed using a hybrid of approaches that included the use of Atlas Ti (Computer assisted qualitative data analysis); thematic analysis (Colliuzzi's seven-steps) and content analysis (Krippendorff and Bock, 2009).

Emergent themes and variables on interest were explored further via an online survey that will be based on a quantitative design. Descriptive and inferential analysis of data was carried out using the Social Sciences Statistical Package (SPSS version 21). Measures of association such as T-test, Cronbach's alpha will be used to determine relationships between different factors.

1.6.4 PRETESTING

Data collection for the study was based on the use of two data collection instruments as indicated below: (i) semi-structured interview schedule for the individual interviews and (iii) a self-complete questionnaire for use on the online survey. Each of the data

collection tools needed to be piloted or pre-tested to ascertain how easily operationalized the instruments can be in the “real world”. This was done by testing the interview schedule with some of the individuals selected for interviews (n=5) and by testing the online survey tool with (n=10) of the randomly selected respondents. The process of pilot testing had two objectives i.e. testing whether each of the interviews on online survey questions were understood by respondents /participants and (ii) whether respondents / participants all had the same understanding of posed questions. The pilot testing also enabled the assessment of how well ordered each of the questionnaire/ interview items were. This approach has been supported by many including (Johnson & Onwuegbuzie 2012; Creswell 2009) who see this as a way of ensuring parsimony in the inclusion of respondents.

1.6.5 DELIMITATIONS/SCOPE

The study included executive and strategic management staff of eThekweni Municipality whose working functions include the administration of either a paperless or print-based document management process within eThekweni’s Administration Unit.

1.6.6 LIMITATIONS

The study was exclusively based within eThekweni Municipality and its findings will have limited generalisability outside of similar municipality entities within similar settings in South Africa. The combined use of quantitative and qualitative methods within the study maximises both the potential validity and reliability of the findings. The study has the potential to be replicated in other settings and could serve as a blueprint model for others in the field.

1.6.7 VALIDITY AND RELIABILITY/TRUSTWORTHINESS (QUALITATIVE RESEARCH)

Meissner, Jones and Palinkas (2011) identifies validity as referring to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration. The use of a combination of data collection approaches i.e. the individual interviews; the focus group discussions and the survey do allow for much

more substantive triangulation of methods which will in turn ensure that the benefits of each of the approaches are maximised. This aligns well with Parahoo (2006) and Palinkas, Polit and Hugler (2011) view that there are three types of validity in qualitative research, they are known as descriptive (concerned with giving an accurate account of what is under study); interpretive validity (having the ability to provide the proper meaning of events as perceived by the participant, providing an emic perspective) and theoretical validity (refers to categories identified and relationships existing between these categories and abstracts and the explanation discovered by the researcher from the interpretations and descriptions given). In this study the researcher used two appropriate methods to ensure triangulation that adds to the validity of the scientific research (Creswell 2009; Johnson & Onwuegbuzie 2009).

1.7 SIGNIFICANCE OF THE STUDY

Despite their obvious financial impact on business running costs, document management systems have received limited critical appraisal, a fact observed by Gaffoor and Cloete (2010), whose work on public management systems in South Africa, shows a need for an increasing and concerted focus on developing new efficiencies within business processes. With regard to print-based versus paperless document management systems, the uptake of the latter option has not been as widespread in South Africa, as has been the case in more developed countries. This lack of progression represents a noteworthy problem in terms of environmental sustainability, financial efficiency and socioeconomic progression, at the very least. The current study offered a rare opportunity for the empirical evaluation of document management systems using constructs of the technology acceptance model (TAM) AlShibly (2014) and with respect to Total Quality Management (TQM). The discoveries from the study offer significant possibilities for reducing business costs for all entities that have document management aspects within their operations.

1.8 THE UNIQUE CONTRIBUTION MADE TO THE RESEARCH AREA

The researcher's review of data and published research shows that, to date, no "total quality management" and "acceptance-of-technology" comparative analyses of

different document management system options have been empirically conducted within the South African public service context. The exclusive focus on South Africa represents an informed acknowledgement of the fact that the context in South Africa is made up of a unique and complex set of local conditions that differ from other countries (Gupta 2015; McCormack 2011). Even so, the study's investigation of global comparatives gave a rare opportunity for the identification of best practices especially with regard to the South African context. Clarifying the total quality management; business excellence and technology acceptance constructs of different document management systems, set the basis for the development of evidence-based methods and options for document management. Guided by this, the current study presents the first ever documented TQM and TAM analysis of different document management systems within South Africa.

1.9 ETHICAL CONSIDERATIONS

The study had to adhere to a code of principles and to rules of conduct. These are all the responsibility of the researcher whose intentions and plans were presented as part of the ethical considerations. As indicated by Parahoo (2006), research ethics involve protecting the rights of the participants and the institutions in which the research is conducted and in maintaining professional integrity. Within this study, the researcher took a range of steps to ensure compliance with specified ethical principles. Permission for completion of the study involved three processes i.e. obtaining ethical clearance from the Durban University of Technology Ethics and Higher Degrees Committee and (ii) seeking out site-permission from the eThekweni Municipality to gain access to employees working across the municipality and (iii) seeking informed consent from all the prospective respondents and participants.

Informed consent was sought from all prospective participants. As part of this process, participants were informed about the purpose of the study, the roles that they needed to play and possible discomfort (if any) accruing from the investigative process. Consent forms were given to all prospective participants and were signed prior to participation. The following steps were followed in obtaining informed consent.

1.9.1 DISCLOSURE OF INFORMATION

The researcher provided all participants with clear information regarding their participation in the study. To ensure meaningful implementation, the researcher ensured that the consent was understandable, clearly specified the voluntary nature of involvement, the confidentiality and anonymity guaranteed to participants. Further to the above, the principle of justice was centrally adopted. Parahoo (2006) asserts the view that, justice entails being fair to participants by not giving preferential treatment to some and depriving others of the care and attention they deserve. To ensure adherence, the researcher treated all participants equally and ensured that justice was exercised by selecting participants based on research requirements. The researcher also ensured that the researcher-participant relationship did not create room for the participants to be exploited, coerced or manipulated.

1.9.2 ANONYMITY AND CONFIDENTIALITY

All participants and respondents who participated in the study did so with the expressed expectation that their identities would be protected and that no personally identifying information would be availed to any party outside of the researcher. The current study required that respondents and participants provided insider perspectives about processes that they were likely to still be using within their workplace. Therefore, any contributions that highlighted weaknesses of existing provisions may have been unwelcome and participants needed to be reassured that their identities would be protected in the event of any resulting persecution. Anonymity and protecting the confidentiality of participants represents the most foundational of ethical principles and therefore, needed to be critically included in the study plan.

1.10 STRUCTURE OF THE STUDY

In ensuring that the entire research processes engaged in within the study are correctly articulated, this thesis presents the study as seven distinct chapters as described below.

Chapter One: Overview of the study

Chapter one provides the overview of the study and includes the introduction, background of the study, research purpose, methodology and objectives.

Chapter Two: Literature review

Chapter two covers the literature review of the study and critically appraised primary and secondary literature sources that focused on paperless and print based document management systems. The primary aim of the review is to assess literature to determine the state of knowledge and to determine the knowledge gaps with respect to total quality and business excellence in each of the modes of document management

Chapter Three: Theoretical or Conceptual Framework

This chapter presents a brief overview of relevant theoretical frameworks that relate to the concepts central to the study.

Chapter Four: Research methodology and data collection approaches

The research design, data collection methods and analysis approaches are outlined within this chapter. Additional focus was given to ethical considerations.

Chapter Five: Data presentation, data analysis and interpretation

The presentation, analysis and the interpretation of the study results is covered in this chapter.

Chapter Six: Theory Development and Validation

This chapter focuses on theory /model development and includes the presentation of a proposed “best-practice” framework that maximizes on the strengths of paper-based and paper-less document management processes.

Chapter Seven: Conclusion and recommendations

The chapter concludes the study with a summation of the thesis. Here, key observations from the study are discussed along with an overview of each of the

chapters, a consideration of limitations of the study, findings, and recommendations for future empirical work.

1.11 SUMMARY

Cost and operational efficiency; environmental sustainability and overall quality aspects collectively represent critical “make or break” considerations for business owners (Arney, Jones & Wolf 2013; van Wyk, Dahmer & Custy, 2004). Print running costs for example, can, in some business-types, account for 50 percent of their running costs. Despite their obvious financial advantage, some forms of document management systems e.g. paperless options, have not received the expected uptake and in some instances, print-based options continue to see increasing usage patterns, particularly within developing economies. The need for a more theoretically founded understanding of the strategic imperatives that guide choice of document management system represent an aspect of this noteworthy problem that should be explored. The current study focusses on environmental sustainability, financial efficiency, technology acceptance theory and total quality management and specifically conducts a comparative analysis of the acceptance of document management systems in order to evaluate their impact on total quality management in selected municipalities in KwaZulu-Natal, South Africa. The chapter encapsulated the background to the study, the research problem, purpose and objectives of the study. An overview of the study’s methodologies was also discussed. The chapter also articulated the structure of the study, forwarding an overview of each chapter. Chapter Two presents the literature review that offers a review of theoretical and empirical contributions in the study area.

CHAPTER TWO

THE LITERATURE REVIEW

2.1 INTRODUCTION

Following on from Chapter One which provided a comprehensive overview of the study, this chapter (Chapter Two) presents a review of primary and secondary literature that is identified as being relevant to the research topic. Relevance to the research topic will be assessed on the basis of two primal points of departure i.e. in that the identified literature offers insight into the seminal and contemporary literary sources related to document management systems, the acceptance of new technology and quality management within these contexts. Essentially, the chapter will deal with the search for, and critical review of literature relevant to the research topic i.e. the appraisal of document management systems within public services. The chapter also provides a snapshot of literature related to local policy aimed at offering current insight practices and thinking.

The strategic review of related research is premised on an acceptance, as noted by Carter *et al.* (2014), that research is rarely conducted in an intellectual vacuum and the study of any topic must be benchmarked against an existing knowledge base and it is incumbent on all researchers to undertake a formal review of literature to familiarise themselves with that knowledge base.

2.2 LITERATURE REVIEWS AND THEIR PURPOSE

The Royal Literary Fund (2016) defines a literature review as,

a search and critical evaluation of the available literature and it offers an assessment of the literature and provides a summary, classification, comparison and evaluation of the state of knowledge as it relates to a chosen topic area. (The Royal Literary Fund 2016:32).

Literature reviews have a critical role within the research process and serve a number of purposes beyond surveying the literature related to the chosen topic. They facilitate

the synthesis of predominant evidence so as to highlight areas of agreement and

disagreement within the evidence. Through a critical analysis of evidence on a topic, a review allows for the identification of gaps in current knowledge; through systematically highlighting some of the limitations of existing theories and debating positions; and through this process, it sets the scene for the identification and confirmation of areas for further research.

2.2.1 LITERATURE REVIEW TYPOLOGIES

As indicated earlier, the primary objective of the current study was to conduct an appraisal of eThekweni municipality's document management systems using constructs of the Technology Acceptance Model (TAM) in order to evaluate their impact on Total Quality Management (TQM). The choice of this as a topic acknowledges the serious implementation challenges and service threats posed to municipalities and other public service providers by the low and inconsistent adoption of effective document management systems.

The process of carrying out a literature review differs from topic to topic and as such, the researcher considered a number of review typologies that included systematic reviews, theoretical reviews, argumentative reviews, Integrative Reviews, Historical and Methodological Reviews. The table below offers a summary of the different types of reviews that were considered including the rationale used by the researcher in identifying whether they were appropriate for use in the current review of literature.

Table 2. 1 Types of Reviews (Source: Author's Own, 2019)

Type of Review	Main Characteristics	Rationale for selection / non-selection as the primary review methodology for the current study.
Systematic reviews	Draw together all empirical evidence that fits pre-specified eligibility criteria in order to answer a specific research question (Grey, 2012). Key characteristics are a clearly stated set of objectives with pre-defined eligibility criteria for studies; an explicit, reproducible methodology.	This type of review only considers pre-determined questions and includes studies that meet non-negotiable criteria. This would have been an inappropriate limiting factor with regard to the current topic.
Theoretical Review	This review type puts forward a focus on concretely examining the corpus of theory that has accumulated in regard to an issue, concept, theory, phenomena and collates the information primarily as a critical review of theories within the subject field.	This approach exclusively focuses on theory and not any other empirical contributions. Utilisation of this review approach was deemed inappropriate as it excludes some sub-types of literature.
Historical Reviews	This review type focusses on examining research throughout a period of time, often starting with an issue concept, theory, phenomena emerged in the literature (Grey, 2012).	This type of review presents material with the chronology of theoretical developments as a primary determinant and fails to take account of themes that may be worth noting.
Argumentative Review	This form examines literature selectively in order to support or refute an argument, deeply imbedded assumption, or philosophical problem already established in the literature (Virginia & Clarke, 2013).	This approach is best in clarifying a debated issue and the current study is more of an explorative rather than a debitive study.
Integrative Review	This method summarises past empirical or theoretical literature to provide a more comprehensive understanding of a particular phenomenon (Galvan, 2015).	This method is primarily used for integrating knowledge about a topic and less about collating information to answer a series of research questions. Was not selected on this basis.
Methodological Review	This approach provides a framework of understanding at different levels of the theory, substantive fields, research approaches and data collection and analysis techniques (Galvan, 2015).	This method focusses on ontology and epistemology and would have limited the remit of interest.

Thematic Review	This review focus is on thematic assessments of literary sources and gives the researcher the freedom to develop identify key themes as they relate to the specified research questions.	This type of review offers maximal flexibility to the researcher to cover as wide a number of issues as is required to address the research questions specified within the study plan. This review is appropriate for the review of both qualitative and quantitative evidence. This was the type of review that was adopted for the current study.
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After a careful consideration of the advantages and limitations of the different types of literature reviews, the current review is based on a theoretical review. In the completion of the review, the identification and collation of data is specifically focused on addressing key research questions in addition to determining the state of knowledge as it relates to the effective use of technology-based document management systems. Particular attention is paid to providing foundational insights into the following:

- the range of alternative document management systems (nationally and internationally);
- the best practices in document management in municipalities globally;
- the total quality performance of each of the identified document management systems;
- the range of factors that influence technology acceptance as applied to each of the identified document management processes;
- the strategic priorities that influence technology adoption of document management processes;
- the characteristics that describe an effective total quality and technology acceptance framework in an effective document management system.

2.3 THE PROCESS OF UNDERTAKING A REVIEW

Although dependent on the subject matter and the range of questions being answered, the process of conducting a literature search and preparing a written review centres around systematically locating and critiquing studies and drawing conclusions about existing evidence and its contribution to the current understanding of the chosen question. To this end, a well written research review should provide a well-organised summary of the current state of knowledge on a topic which also highlights both the consistencies and contradictions in the literature (Polit & Beck 2008:105).

According to Parahoo (2003), evidence differs and is of unequal value. In supporting this view, he argues that different research design has different strengths, and different

levels of value and this factor should be centrally integrated into any evidence-based decision-making process. The view and notion of differing levels of credibility between sources was initially postulated by Sackett *et al.* (1996) and represents an important tool that researchers utilise to determine the quality and credibility of different types of data sources. The original hierarchy (diagrammatically represented below) offers the original theoretical overview that has formed the basis of subsequent methods of assessing data quality and credibility. In Sackett's original hierarchy, background information, such as non-empirical policy documents and expert opinion are rated as the lowest order of evidence with the RCT's being identified as the most credibility-worthy evidence forms. Figure 2.1 below depicts Sackett's original hierarchy and from this, the highest levels of evidence are at the peak of the triangular model and sources of data with the lowest credibility are placed at the bottom.

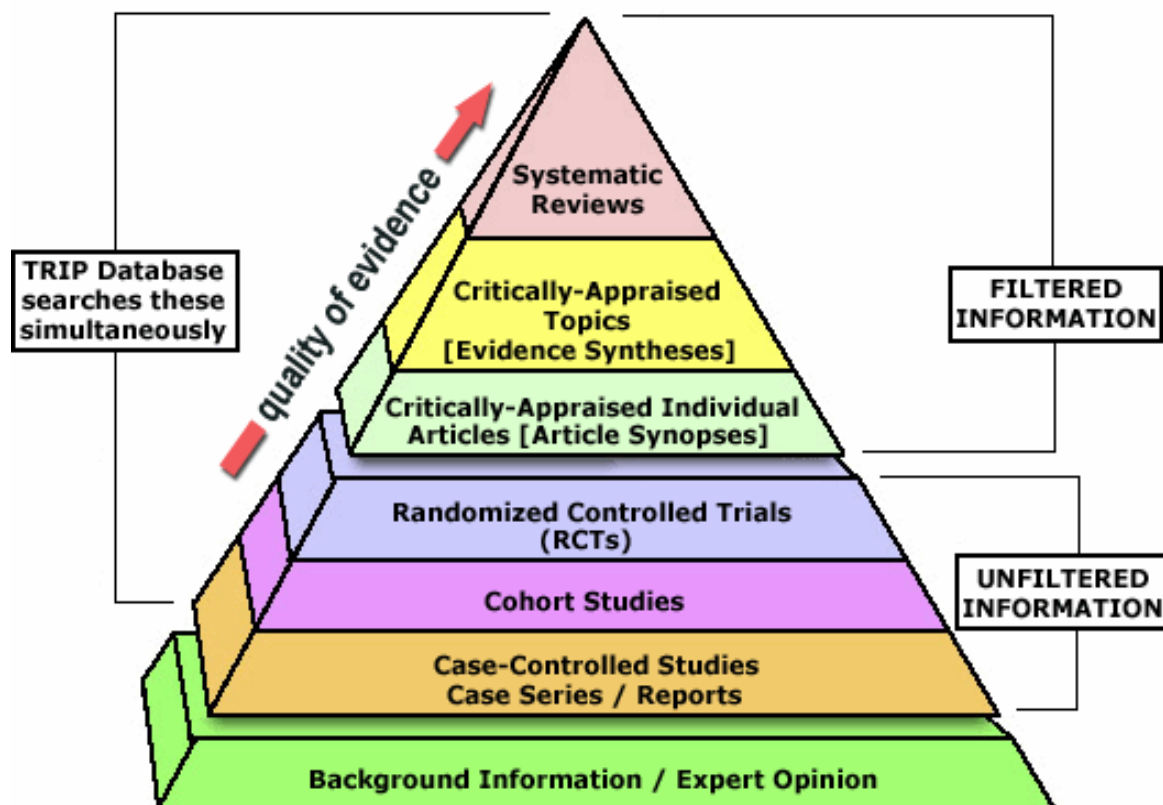


Figure 2. 1 Sackett's Original Hierarchy (Source: Sackett's, 1996)

Despite the categoric summative views asserted by Sackett's original work, a number of subsequent advances and refinements have been suggested by many within the research field including Page and Meerabeau (2004). As such, universally, there is no agreed hierarchy of evidence, however, there is a general agreement on the relative strength of principal types of research. Randomised control trials (RCTs) are traditionally considered to rank above all other methods of research, and uncontrolled studies and opinions at the bottom (Polit & Beck 2008). The grading of evidence has been principally used as a way of determining how credible different sources are to the understanding of any area of study. As a complement to this, many practice based studies have offered key assertions about the important value that should be attributed to local policy as a credible data-source. Schmiedeberg (2010) provides a systematic exploration of this and provides a compelling case that policy and practice documents should be included in any literature review if the praxis context is to be fully understood by the researcher. This conclusion was reached in the context of wider decision by the researcher in which he concluded (with the support of evidence) that, triangulation of different data types was important in ensuring that the study offered a comprehensive assessment of the state of knowledge as it relates to the development of document management systems.

The debate about the value of a triangulated approach has its roots in wider debate about the value and contributions of different methodologies. In the main, there has been sustained lack of consensus about which methodological (qualitative or quantitative) approach is most suitable for exploring a wide range of issues, with discussions mainly looking at rigour, validity and reliability (Polit & Beck 2004). Historically, researchers have perceived scientific methods" of research to consist of only quantitative research, because of their basis on systematic and objective processes, which some have argued, provide a sounder knowledge-base than qualitative research (Burns & Grove 2003).

In contrast, supporters of qualitative research argue that qualitative research is more effective for enhancing our understanding of complex human phenomena/experiences (Smith 1996). Researchers who support qualitative methodologies believe that the truth" is complex as well as dynamic and can be discovered only by studying different subject matter as they interact within their social setting (Munhall & Boyd 1999). In

spite of the continuing debate about which approach most contributes to knowledge, there is a wider agreement that both approaches complement each other as they generate differing knowledge (Burns & Grove 2003). Beyond that, there is wider agreement that data source triangulation represents best practice. This realization serves as a key basis for ensuring that non-evidence-based policy and practice documents should also be included within the literature review if the context of document management practices is to be fully understood.

2.4 FORMAT OF REVIEW

The current review aims to achieve all the above objectives and will be structured in accordance with the framework and model proposed by Crombie (2003), which includes a number of key sections such as an overview of the data search strategy, a tabular summary of reviewed sources and a thorough review of systematically located literary sources. In the line with the thematic review format, the presentation of literature will be under thematic headings as they relate to technology acceptance as it relates to the adoption of electronic document management systems and their impact on quality issues within public service.

2.5 DATA SEARCH STRATEGY

Initial searching focused on a subject and topic guided search of the University library catalogue for books and journals that related to the topics of electronic document management systems, technology acceptance and quality issues in document management practices. Despite the laborious nature of manual searching, traditional libraries offer an excellent starting point for the foundational gathering of information (Guba & Lincoln 2005). Simultaneously, a range of electronic databases were identified and utilised to widen the literature base of the review. Parahoo (2009) specifically highlights the value and critical importance of the reviewer possessing the skills necessary to perform a comprehensive search of the available literature and to this end, particular attention was given to establishing familiarity with a wide range of search engines and databases.

Initially, a set of keywords related to the study area was developed using a mind-map as the format for capturing key terms, core elements and dominant arguments.

Within the current enquiry the following search terms were used alone and together in line with Boolean principles to widen the likely results.

1. Factors influencing technology acceptance
2. Technology acceptance theory.
3. Total quality management in technology acceptance.
4. Total quality management and electronic document management systems.
5. Factors influencing efficacy of electronic document management systems.

From the initially highlighted sources, some literature was excluded while relevant sources that supported the study and provided answers to the research questions were retained and arranged accordingly.

2.6 INCLUSION AND EXCLUSION CRITERIA

The primary search based on each of the search terms (used individually), identified over 389 potential sources. These sources were subjected to further and more specified parameters such as 'research-based sources' and 'English', reduced the initially identified number to 74 sources. As a final data cleansing action, these identified sources were subjected to specific inclusion and exclusion criteria, as indicated below.

2.6.1 INCLUSION CRITERIA

- Primary and secondary research that focused on technology acceptance as it relates to electronic document management systems.
- Primary and secondary research looking at total quality management and electronic document management systems.

- Municipality and government policy and practice guidelines especially those that relate to KwaZulu-Natal and South Africa.
- Studies that focused on issues related to technology acceptance, quality assurance and document management systems.
- Studies published in English.
- In acknowledgement of the difficulties that exist in authenticating data from the worldwide web (internet), only literature from validated academic databases such as Ebsco-Host and CINAHL were considered for inclusion within the review.
- Furthermore, hard copy paper versions of studies cited by internet sources were manually sourced by the reviewer, as a means of validating their existence.

2.6.2 EXCLUSION CRITERIA

- Primary and secondary sources whose academic credibility could not be verified.
- Studies written in languages other than English
- Studies published over 20 years ago.

After careful application of the above criteria, 43 sources met the strict criteria for inclusion, and also adhered to the academic and scientific rigour expectations for inclusion as specified. Each of the finally accepted studies and sources are reviewed within the current chapter.

A summary of each of the studies and secondary sources that were appraised within the current review is presented in a table as Appendices (Appendix 6). Each identified source is also given a fully narrated review after the tabulated summary. The process and format for appraisal was guided by standardised frameworks including Crombie (2003) and Depoy and Gitlin (2012) and Crombie (2009). The decision to use a combination of frameworks is seen as best practice for reviewing qualitative and quantitative research sources (Depoy & Gitlin 2012).

2.7 AN OVERVIEW OF THE VALUE OF ELECTRONIC DOCUMENT MANAGEMENT SYSTEMS – DEBATES ABOUT PAPER-BASED AND ELECTRONIC OPTIONS.

Despite their obvious financial impact on business running costs, document management systems have received limited critical appraisal, a fact observed by Gaffoor & Cloete (2010:43), whose work on public management systems in South Africa, shows a need for an increasing and concerted focus on developing new efficiencies within business processes. With regard to print-based versus paperless document management systems, the uptake of the latter option has not been as wide-spread in South Africa, as has been the case in most countries that have initiated processes to adopt electronic methods over paper based and manual options. Several studies have been conducted to better understand what the actual costs and benefits of electronic document management systems are when compared to paper-based options. Carter & Belanger (2005); Mullner & Grimm (2005) and others, offer in-depth analyses and present a number of key observations which should be taken account in any discussion about technology acceptance issues.

Firstly, there appears to be some contradictory evidence about the benefits and limits of electronic systems, for example, Igbaria *et al.* (1997) show EDMS to be disproportionately expensive at the point of initiation, that many services and organisations often do not possess the material resources to effectively oversee their introduction. As much as this is not a distinct disadvantage, it represents a critical acceptance factor that can dissuade use of newly introduced innovations. Furthermore, others including Hsu & Chiu (2006) show that the introduction of new technologies is usually problematic because potential users are inadequately trained and as such, the full potential of the new technology is never realised. As noteworthy as these summations are, Horst *et al.* (2007) put forward the view that these shortcomings are not specifically about EDMS but rather speak to poor implementation readiness issues. Others including Featherman and Pavlou (2003); Grandon and Pearson (2003) and Heinze and Hu (2007) identify the benefits of EDMS over traditional manual methods of paper management. The most notable benefit relates to the environmental sustainability of paperless options over paper-based options.

Beyond that, EDMS offer automation that can, in the medium to long-term result in cost savings. This is especially important in the current economic climate. In this respect, Calloway (2010:237) and Plimmer & Apperley (2007:34) present work in which they conclude that business-running costs have increasingly become the make or break factor in business survival. Studies of business such as Carr (2005:78); Djassemi & Sena (2006:46) and Shaffer (2013:ix) have all encouraged the need for streamlining of business functions as one the critical first steps that businesses should take with respect to cost management. In South Africa, the work of Cloete (2003:29) and Gaffoor and Cloete (2010:67) has been of seminal importance in specifying the use of user-friendly, state-of-the-art electronic policy support tools to promote more successful strategic policy assessment that, in turn, will improve sustainable service delivery outcomes in the public sector. One area of business function that has received varied attention relates to the strategic adoption of various document management systems as efficiency and cost management tools.

Notably, Gilani (2009:16) and Kunis (2007:31) argue that, within public services, the debates about the acceptance of different document management systems have noted the specific benefits of EDMS as ranging across a number of issues including – cost efficiency, environmental sustainability, quality management and efficient business function. With respect to cost efficiency, Liu and Stork (2000:24) and Vallis (2009:71) argue that, the adoption of electronic document management options can result in anything from 10 percent to 50 percent of total cost reductions.

Liu and Stork (2000:15) and Vallis (2009:38) further argue that document management related wastage within public services could be the primal causal factor for business failure. According to Gnoni and Elia (2013:77) and Arney *et al.* (2013:12), recent years have seen the increasing prioritisation of concerns about environmental sustainability and within business, document management processes represent the single most cited threat to environmental sustainability. So significant is this aspect, that Larrán & Andrades (2015:07) cite the environmental compliance of public services as the foremost important consideration that should be made when selecting document management options. With

this and other related observations, document management has become an incremental challenge for policy makers and employers, primarily because of the growing acknowledgement that inadequate provisions and poor document management can even result in potential of breaches in security

2.8 THEORETICAL CONTRIBUTIONS TO UNDERSTANDING TECHNOLOGY ACCEPTANCE – A BRIEF OVERVIEW OF SEMINAL CONTRIBUTIONS.

The current review is primarily focused on understanding the state of knowledge as it relates to clarifying the factors that influence technology acceptance within organisations. In addition to considering the empirical contributions over the passage of time. The area of study has been marked by significant theoretical contributions. The theories have broadly focused on the psychology of technology acceptance i.e. the cognitive processes and behaviours that impede/promote technology acceptance and the system-based factors that may influence whether or not individuals seriously consider accepting and making use of the newly introduced technology. The theoretical contributions that focus on the psychology of technological acceptance have primarily been based on Davis's (1985) seminal contribution in which he proposed the technology acceptance model (TAM). This model, although theoretical, continues to be the mainstay of information systems implementation and is widely seen as the one model that brings together many of the individual factors that have been isolated by others as having some influence on the uptake of new technology within organisations. So wide is its use that a number of researchers have specifically cited a range of empirical studies that include reviews of literature, citation analysis and systematic reviews and all these analytical explorations have concluded that the theory is indeed significant in determining and predicting the factors that influence intention to use a newly introduced technology.

Zhang & Xun-Hau (2007) present one such review of literature in which they carry out the citation analysis off no less than 69 Studies to ascertain predictive value of the TAM in indicating adoption behaviours with respect to new technology. Within their study, they

showed that the TAM can predict up to 85% of behaviour accurately. In this study, the findings show that factors such as perceived usefulness, perceived ease of use, attitude, short-term behaviour, long-term behaviour, compatibility, perceived enjoyment and training impression were all key factors that were identified primarily as the result of utilizing the technology acceptance model as the framework by which investigations were carried out. Barhoumi (2016) presents a similar assessment of the practical value of the TAM via a study of 107 potential EDMS users and in this, they conclude that user satisfaction as it relates to an innovation serves as the primary determinant of adoption patterns followed by content, information architecture, the cost of access and technology fit. As a summative opinion, the TAM is seen as the principal theoretical contribution which forms the basis of all studies of adoption behaviours as they relate to new technology (Pai & Huang, 2010).

The Technology acceptance model (TAM) specifically and critically explores the role that identified factors such as the perceived ease of use, the perceived usefulness and the probability of system use, all play in determining the likelihood of full implementation of the newly introduced Information Systems.

Critically, the TAM prioritises the tracing of the impact of external factors on internal cognitions, beliefs, attitudes and intentions. As a basis of its application, the TAM was derived from earlier work by Azjen & Fishbein (1969) in which they proposed the theory of reasoned action (TAR) (Azjen & Fishbein 1980). The theory of reasoned action offers insights to understanding the voluntary behaviour of individuals. It argues that intention to perform a certain behaviour precedes the actual behaviour and results from a belief that performing the behaviour may lead to particular (often beneficial) outcome. Therefore, stronger intentions lead to an increased likelihood that the behaviour of interest will be performed.

Together, the TRA and the TAM offer a widely accepted viewpoint, which centres on stating that external factors play an indirect role in influencing attitudes, perceived boundaries of normality and how these psychological factors have a significant impact on individual decisions to take up new technologies. Legris *et al.* (2003) specifically test the application value of these two theories combined together. In their review of literature, Legris *et al.* (2003), consult over 80 Scientific publications (published between 1980 and 2001) as the basis for identifying the empirical value of the TAM and the TRA.

This review of literature perhaps represents the most in-depth review of theories that have been used to understand technology acceptance, and in that respect, should be seen as a critical and seminal overview of theory integration into technology acceptance. Through this review, a number of important discoveries were made by the reviewers. Firstly, the review considers the validity of the TAM as a foundational theory in understanding uptake patterns as related to the acceptance and implementation of newly introduced information systems. Legris *et al.* (2003) surmised that, since its initial proposal in 1986, the technology acceptance model had been tested and extended and broadly speaking, its application could usefully predict up to 40% of system use (Azjen & Fishbein 1980; Hu *et al.* 1999). Despite this important claim, the review showed that, not a single one of the studies reviewed had fully utilised all the elements of the TAM. Legris *et al.* (2003) see this as indicative of the flexibility of use of the TAM – an observation they support by identifying examples of where it has been integrated with other models/theories. For example, the TAM has been integrated with the Theory of Reasoned Action (TRA)) successfully as a basis for expanding current theories about the factors that impact technology usage.

As a foundational theory, research on the application of the TAM consistently shows it to have significant value in predicting technology uptake. Even so a number of key observations have been made within the discourse. For example, a closer analysis of the different components of the TAM show some contradictions across different studies. The relationship between perceived usefulness of innovation and the associated attitudes towards usage were generally found to be positive and statistically significant however, one study by Bajaj *et al.* (1998) suggest, no relationship between attitudes of potential

technology users and their perceptions about the usefulness of and the identified technological innovation. This finding, despite being anomalous in many regards, continuous to receive post-facto support from social psychology research. It suggests that pre-existing attitudes are intractable and unlikely to be significantly affected by perceptions that an innovation could be useful.

Straub *et al.* (1997) make an important observation about the fact that the TAM was largely tested in North America and its application usefulness should be understood as limited only to those contexts. In furthering this line of investigation, they present a study in which they explore the transferability of the TAM across cultures. This is seen as a none-negotiable prerequisite especially within the globalisation context in which technologies being adopted in one country or region must also be utilised in other parts of the world. This assertion further cements the value of a cross-cultural understanding of the TAM.

Straub *et al.* (1997) rightly at knowledge that considerable research has been carried out on understanding adoption behaviours as they relate to information technologies and in that, they note too, that very little attention has focused on the possible cultural and ethnic variations that may exist. To that end, they present a study that looks at the application of the TAM in Europe, Japan and Southern America. Supported by other similar research, Straub (1997) identify a number of cultural dimensions and that they believe play a critical role in determining Technology acceptance. These dimensions closely align with Hofstede's cultural dimensions and are summarised as:

1. Power distance - the degree of inequality among people in which the population of the culture considers normal.
2. Uncertainty avoidance - the extent to which people in the culture feel uncomfortable with uncertainty and ambiguity.
3. Individualism - the extent to which members of the culture prefer to act as individuals rather than as collective members of groups.
4. Masculinity - the degree to which attributes such as success, competition, performance and assertiveness exist within the people of one culture as compared

to milder and values such as the maintenance of the personal relationships, care of the disadvantaged and service.

Through the above identified cultural factors, Straub *et al.* (1997) and others indicate that the existence of any of the four dimensions may account for differences between uptake in one type of society to the next. This is an especially notable observation especially in the context of South Africa whose culture will have distinct and differentiated characteristics amongst its population. Ballard *et al.* (2007) offer interesting perspectives on the influence of apartheid and postcolonial democratic processes on the uptake of new technologies. By way of the participating study, the researchers were able to explore the complexities power relationships that have traditionally been central two operations within organisations in South Africa and from this they're able to show how attitudes towards uptake of new technologies could be impacted on.

Notably, South African culture has rightfully prioritised democratic processes and community involvement in all its innovative work and as such, the uptake on any technologies is subjected (very strongly) to critique on the basis of its support for the democratic transformation agenda that the country is pursuing. With specific reference to the acceptance of the technology within the workplace, this pre-existing cultural norm requires that communication of any innovations is carried out sensitively and accommodates the societal need for technological innovations that are seen as non-discriminatory and empowering. The additional considerations related to cultural and social norms add to considerations in ways that outside the TAM's focus on the perceived ease or usefulness of the proposed information technology.

Several factors have been identified as being key to determining the uptake in acceptance of new technology within the workplace. Theoretical and empirical viewpoints have resulted from wide ranging studies of factors related to technology acceptance. In providing insight into these aspects, Huang *et al.* (2009), present a study in which they applied a theory of planned behaviour to better understand individual intention to maximally utilise electronic document management systems in Taiwan. Based on a study 186 users of the government EDMS, Huang *et al.* (2009) aimed to explore the factors that

determined user acceptance of an electronic document management system. More significantly, they found that pre-existing perceptions about the perspective usefulness of a document management system represented a key predictive factor with regard to intention, and in turn intention was the single most important predictor of technology acceptance. Critically their study showed that perceived usefulness, perceived ease of use, compatibility, external and internal influence and facilitating conditions such as managerial support and training with the most significant antecedent factors and that increased individuals' intention to utilise newly introduced technology. This study suggests that e-government entities can you improve their success and take of new technology they simply paying attention to the above noted factors. Most critically, the role of training, the effect of system compatibility in the attitude of the users are highlighted as being significant predictors of future use. Importantly this study concludes that users with higher levels of self-efficacy showed the most positive behavioural control towards the effective use of a newly introduced innovation.

It is important to note and that this study it was a cross-sectional study and did not offer longitudinal insight into the use and long-term adoption of electronic document management systems. This particular limitation is addressed in a similar study by Pai Huang (2010) in which they apply the technology acceptance model in the introduction and longitudinal evaluation of how perceived system usefulness, ease of use and intention to use, impact long term adoption of a new electronic document management system. Their study carried out over a period of three years and across 85 regional hospitals found that influences such as support from senior management, the coordination of internal resources and general acceptance of the computers by staff, played an important role in determining long term impact and usage of newly introduced EDMS. Based on a series of time-based questionnaires, participants were able to provide longitudinal insights into factors impacting their uptake of electronic document management systems.

Their summative conclusion over a three-year study period was that, the uptake of electronic management system was premised on the interplay between a number of factors that are not necessarily connected to the quality of the electronic document

management system but rather to wider service related issues such as (i) the quality of information being adopted from paper-based systems to the newly introduced EDMS, (ii) the quality of service itself and (iii) the system quality. Each of these factors are seen as being foundational in determining perceptions about the usefulness and ease of use of the proposed or newly introduced EDMS. This observation supports the Information system success model proposed by DeLone and Mclean (2003) which highlights the importance of variables external to the individual, as important “first-level” influencing factors in determining the uptake and continued use of an innovation. Simply put, the study by Pai and Huang (2011) offers a new dimension to the discourse by positing that, the uptake of a new innovation is intrinsically associated with the quality of the information, the quality of the service and the system where the innovation is being introduced.

Although important to the discussion, these conclusions may be critiqued for suggesting that poor uptake of innovation is, at the core, a consequence of low-quality information, low quality employees and poor services. Huang and Pai’s (2011) study was based on a cohort of 366 respondents made up of 22 men and 344 women. The large sample size combined with the longitudinal steady period make this an important study for the analysing whether the uptake of electronic document management systems can be sustained over a long period. This is especially noteworthy given the fact many of the other studies within the discourse focus more on cross-sectional analyses of technology adoption factors. In particular, this study’s proposition that information Quality positively affects perceived usefulness is especially noteworthy given that the adoption of new technology often focuses exclusively on the innovation rather than the information that is being entered onto the innovation. Furthermore, this study demonstrate that system quality positively influences users perceived ease-of-use. The study was primarily focused on female users and raised questions about whether the observed findings may have been influenced by gender.

With respect to the role played by gender in determining technology acceptance, Kaaki, Rayer and Alshamrani (2013) carried out a study of female users’ acceptance of an electronic document management in Saudi Arabia. More specifically, the research aimed to identify the primary factors that encourage or discouraged female users’ acceptance

or rejection of e-management services within an organisation. This study specifically explores the usage of the electronic document management system as it is related to three factors: - personal, technological and transactional. In general, Kaaki *et al.* (2013), showed that the uptake of the EDMS was affected by the nature of the administration of the organisation using it, and the type of ICT aptitude of the intended users within the organisation. With regard to the latter, Kaaki *et al.* (2013) studied whether gender, in particular being female, influenced the way in which technological and transactional factors were perceived and responded by intended EDMS users.

The study concluded that female staff members often had significantly more concerns about the “fit-for-purpose” nature of EDMS than their male counterparts and that led to an increased interest in ensuring familiarity with any newly introduced technology. The respondents were particularly attentive to issues relating to the perceived usefulness of the new technology much more specifically than their male counterparts. As a global conclusion, the study asserts the view that females tend to have more persistent motivation toward adopting new technology when compared to their male counterparts. They were more willing to accept training on the newly introduced EDMS than their male counterparts and tended to adopt the EDMS more immediately than males. It is important to note that many of the female participants within the study were working within administrative positions and as such, had more sustained pre-exposure to administrative technology.

The contribution about the role played by gender in technology acceptance has not been posited by any other research and for that reason, the findings by Kaaki *et al.* (2013) have the potential to offer seminal direction. It is important, however, to take account of the fact that the study was carried out in Saudi Arabia – a society that has much more gender-based differentiation than many other countries. This should be understood as confirmation that the study’s findings need to be tested further in future studies.

Afonso *et al.* (2013) present a study in which they query the reasons why, despite the development of many new technological inventions, the uptake and continued use often fall below what is expected. They note too, that local government and local governmental authorities seem to have much poorer technology adoption outcomes than private

enterprises. Using data collected via a survey of 2175 employees, the study focused on understanding the determinants of user acceptance of technology within a local government setting. From their exploration, five factors i.e. (i) intention to use (ii) performance expectancy; (iii) effort expectancy; (iv) social influence and (v) facilitating conditions, were the most cited influences on user acceptance of the EDMS. Within the contexts of the local government departments that they studied; findings strongly pointed to the fact that intended users felt discouraged to take on new technologies because they were often being required to adopt new technologies in addition to previously utilised manual options. In that regard, the newly introduced EDMS did not reduce workload but instead operated as a duplicate to the existing systems despite it being introduced as a replacement. This was closely linked to 'performance expectancy or the intended users' perception of how well the newly introduced EDMS would be successful in achieving its advertised functions. The importance of performance expectancy is highlighted in other studies including Gupta et al. (2008) and Venkatesh (2010) and is directly associated with intention to use.

Afonso et al. (2013) also highlight the ease of use and other factors such as system flexibility as determinants of effort expectancy. In other words, uptake of EDMS systems within local government settings is positively associated with the ease of use or the effort efficiency intended users perceive when a new system is being introduced. They further posit that; the expressed opinions of colleagues or professional superiors were seen to directly affect adoption rates. Finally, this research points to the effect of user's pre-existing knowledge and skills related to information systems as directly associated to intention of use. Despite providing important discoveries, it is important to acknowledge the limitations of Afonso et al. (2013).

Firstly, the study was carried out as a cross sectional assessment of adoption behaviours and the understanding of whether individual users continued their use of the EDMS were not assessed. The findings were also based on self-reporting and this approach may be biased by subjectivity. Even so, respondents were asked to verify some of their asserted responses as a way of validating responses. A significant contribution of the study is its focus exclusively on governmental enterprise especially in confirming the often-cited

problem of a duplicated use of manual and EDMS options within government services. Carter & Belanger (2004) and Chin (2010) present study findings that further elaborate on this and argue that the limited responsive nature of operations within large governmental departments often mean that the transition from one document management system to another can take years during which time, intended users are incorrectly required to record information on both systems. These views are supported by other research including Castillo-Berrera et al. (2012) who conclude that by virtue of having less market exposure, more legal and formal constraints and higher resource limitations, government services have greater challenges with introducing new technologies than their private industry counterparts.

To add to the observed variations between government and non-government services, Hung et al. (2005) provide an interesting perspective on the adoption of EDMS systems within government services. In their study of acceptance of e-Government tax-filing and payment systems, they draw attention to the relationship between employee adoption of an electronic system with wider reception of that innovation by the public. In this survey, 1 099 public members and 345 intended employee benefactors of an online tax filing system were questioned on the benefits they perceived from the newly introduced technologies. Notably, public opinion about the perceived value of the introduced system appeared to have a direct influence on employee acceptance of the innovation. 72% of employees surveyed indicated that their decision about whether a system was useful was guided by how it was received by the public and less about ease of use as suggested by other studies. Hung et al. (2005) also focus on a government services and in the conclusions, they refer to related studies carried out within private entities and significantly point out the limited reference to the “social influence” of an innovation as a determining factor in its uptake. Taiwan’s e-government services have been ranked the best in the world a number of times in the 21st century and as such, they have dedicated substantial efforts in the identification and exploration of the factors that affect user acceptance of technological advances.

As alluded to above, the concepts related to the uptake of technology have been aligned to a number of theories and models, with many of them focusing extensively on the behaviours of the intended users. Hung et al. (2009) specifically use the theory of planned behaviour (Azjen 1991), as a basis for understanding user acceptance patterns among governmental employees. According to the steering, the primary determining factor offered behaviour is the behavioural intention, which is often determined by the combination of attitude, subjective norms and in individuals perceived control of their behaviour. In this study of 237 potential users of an electronic document management system, the researchers found that attitudes towards a newly introduced system were primary being affected by in individuals' perceptions about the usefulness, the perceived ease-of-use, and their own skills competence.

The findings of this study support many other previous studies then its conclusion that perceived usefulness, perceived ease of training, self-efficacy and facilitating conditions were among the most important determinants of whether or not prospective users did indeed convert to the newly introduced electronic document management system. Despite their usefulness, these findings are limited by that fact that study was carried out as a cross sectional study and did not buy longitudinal insight especially as they relate to the maintenance of system usage.

In furthering the understanding of factors that affect user acceptance of newly introduced technology, Pai and Huang (2010) presented a study in which the introduction of electronic document management systems was initiated within a health care and technology environment. The focus on the study was specifically on the impact that perceived weaknesses in the technology have any impact on eventual acceptance of the technology. Through the completion of a questionnaire targeted at nurses, head directors and allied health staff, the researchers were able to conclude that system quality was often noted by respondents, as an important factor to consider but, one that was not singularly able to determine usage or non-usage. In this study of respondents, of 85 hospitals, the perceived quality of innovation was confirmed as an important influence that needed to be highlighted as a proxy-influence on usage patterns. Gavel (2015), in a

similarly focussed paper, provided an overview of the key factors in influences that make integration of a new EDMS easier within a work-floor management system. Out of a sample of 412 system users this study was able to conclude that perceived usefulness, perceived ease of use remained the most critical adoption predictors. Despite having a large sample size, this study did not look at or consider any factors that fall outside the framework of the TAM. This represents a noteworthy limitation that could have compromised the breadth of elicited feedback.

2.9 ADDITIONAL KEY INFLUENCING FACTORS IN TECHNOLOGY ADOPTION

As indicated earlier on in the review, much of the analysis of adoption behaviours has focused primarily on the factors and influences that are contained within the technology acceptance model and for that reason, it is important to pay particular attention to some studies that identify factors that had not previously been articulated in other studies. Hahn (2012) presents this study in which he assesses the quality of electronic document management systems and concludes that users of the system have progressively become more interested in the environmental friendliness and sustainability of any newly introduced technology. To that end, Hahn (2012) concludes that acknowledgement of sustainability issues and perceived attendance to environmental factors are beginning to occupy the same level of importance in determining behaviour as does the focus on the innovative value of any technology. It should be noted that the work by Hahn (2012) was based on review of literature and it maybe that future work should specifically include the concerns about environmental friendliness and sustainability as key issues that they will explore.

Trkman and Turk's (2009) study focuses on evaluating the range of the effective methodologies that are associated with the adoption of broadband Internet within government departments. Much like Hahn (2012), this study is based on the literature review, but it offers a profound conclusion which identifies that a wider range of acceptance models should be involved far beyond the limits of the TAM. Within this, two

specific factors i.e. perceived enjoyment and personal innovativeness of IT were highlighted as key contributing factors that determined intention to use. These fall outside of the conceptual boundary of the TAM and as such represent issues that need to be investigated further in future work.

2.10 SUMMARY OVERVIEW OF HIGHLIGHTED FACTORS RELATED TO TECHNOLOGY ACCEPTANCE.

The review of literature related to technology acceptance offers wide ranging theoretical and empirical insights into the factors that play an important role in decisions about the adoption of new technologies. The study area has been largely informed by social psychological perspectives (as specified by the technology acceptance model and the theory of reasoned action) research, most significantly the theory of reasoned behaviour and the technology acceptance model which conclude that the adoption of new technology is a result of the interplay of a number of factors that pre-empt intention. Most notably, the theory argues that the intention to adopt a new technology is influenced by the perceived ease of use; perceived usefulness and other factors such as information quality, service quality and system quality.

Despite this multi-dimensional perspective, the TAM has been shown to have limitations of application especially in non-western societies and to that end, a number of cultural dimensions have been cited as especially important in creating a context that is culturally sensitive. With respect to South Africa for example, a number of cultural dimensions including power distance, uncertainty avoidance and Individualism all have impacts on society and that may impact behaviours related to technology adoption. The above asserted view is primarily premised on very limited but seminal work by Oke, Prajogo and Jayaram (2013) who explored the impact that African cultural variations have on technology adoption behaviours. The study, uses the basis of Hofstede's widely recognised theoretical framework that explains how different dimensions of national culture can have an influence on the ability of nations to support and embrace innovation. (Abebaw & Haile 2013) have looked a number of sub-Saharan countries and suggest that

the analysis of technology acceptance behaviours (even within South Africa) should make use of Hofstede's model of cultural dimensions which he defined as bulleted below:

- Power Distance (PDI): The extent to which the less powerful members of a society accept that power is distributed unequally.
- Individualism vs. Collectivism (IDV): The extent to which individuals look after themselves or are integrated into groups.
- Masculinity vs. Femininity (MAS): The extent to which culture is dominated by masculine values as opposed to female values.
- Uncertainty Avoidance (UAI): The extent to which to which the members of a society feel uncomfortable in uncertain situations.
- Long-Term vs. Short-Term Orientation (LTO): The extent to which members of a society are future oriented.

A number of assessments of developed countries compared to developing countries reveal interesting and noteworthy differences particularly the PDI and IDV dimensions. Within the developing countries, there is generally low levels of engagement of lowly powered members of society in decisions about the adoption of new technologies (AlShibly PhD, 2014).

2.11 REVIEW OF LOCAL POLICY CONTEXT

Local policy documents offer input into insight into current practices and most importantly they reflect current thinking within the local municipality in KwaZulu-Natal. Guided by this, a number of key policy documents were identified and subjected to critical appraisal. With each appraisal, each of the identified policy documents is assessed with respect to its utility and agreement/disagreement with existing theory, empirical evidence and accepted best practices.

As a primal basis and in addition to a reliance on locally derived policies and practice guidelines, eThekweni Municipality bases its core procedures and practices on

International standards, most notable ISO/TR 15489-2 which gives directives on the standardisation of records management policies and procedures. This core directive ensures that “appropriate attention and protection is given to all records and that the evidence and information within each document and management entity, can be retrieved efficiently using a range of standardised best practices and procedures (ISO, 2001). ISO-15489 – 1 2001 (E) is widely seen as the global encyclopaedia of document management practices and covers wide ranging issues related to document management ranging from theoretical perspectives related to the benefits of effective records management; the regulatory environment in which the management of documents exists and principles of records management programmes. The guideline also offers insights into practical requirements and provisions that can be made to ensure that any document management system can increase the authenticity of retained records; how systems can harness reliability, integrity and usability of systems. Despite being written as practical guidance, this ISO offers directives on issues that have been cited as key aspects within technology acceptance theory and research. For example, the reference the usability of any document management system is a central aspect of any TAM and the central inclusion within the International standards on information and documentation, records management emphasises this (Sutton 2005).

Beyond the relatedness to existing theoretical frameworks, the International standards offer and implementation blueprint for any robust records system and within this, the focus is on ensuring that any DMS alternative should be focused on ensuring reliability, integrity and compliance with the legislative requirements that may exist in any one given environment. Similarly, comprehensiveness factors such as access, retrieval, retention and disposition capabilities all form integral elements in any document management system. In addition to offering guidance on the structure of any document management system, and the International standards also give in-depth guidance on monitoring in auditing processes that should be accounted for in any effective system. It is important to note that these guidelines are designed for a global use and as such eThekwini has developed a number policy documents and that contextualise priority issues into the South African context. To this end, locally derived policies are cited here as a basis for giving a more local critical overview.

Document management processes are managed via a number of policy initiatives that the KZN municipality are guided by.

The Integrated document and records management solution (eThekweni Municipality, 2010) identifies very clear requirements that the government departments including the KZN municipality have to adhere. Firstly, this policy is premised on the basis set out by the National Archives and Records services Act and specifically requires that public records are created for a purpose and as evidence of transactions, they must serve the primal objectives as vehicles of management, accountability, operational continuity, legal evidence and disaster recovery. This policy has critical importance for KZN in that it details very specifically what the requirements of any document management system should be and in so doing, it also indicates the benchmark requirements that should be fulfilled by any document management system. The policy is derived from other policy briefs that include several key DMS properties are seen as critical to any functional system and these are summarised as system requirements or minimum records management functionality requirements. Firstly, any functional system should have a functional File Plan. This refers to a requirement that any Document Management System must be structured according to the already existing paper-based file plan. It should, at the very least offer the same functionalities as predecessor paper-based alternatives such as allowing for files to closed, archived and retrievable. In addition to the requirements related to the existence of a file plan, any DMS should have a disposal protocol that details retention and disposal periods in line with pre-existing governmental policy and procedure. Further the metadata aspect of any DMS should be uncomplicated so as to cater for all levels of literacy that can be expected within the groups of system users. Jones (2012) and Fangtsou, Chen and Yang (2014) have cited this as a key aspect that is often overlooked when new DMS are introduced.

It is noted that the use of policy as a source of guiding evidence has been critiqued by many including Jones (2012b) and James and Card (2012), who believe in the need for only empirically derived information. Despite this being the 'ideal' – a critical evaluation of non-empirical policy represents an important element of the study area. The Integrated document and records management solution (eThekweni 2010) is especially key as it

contains the practice expectations that have become the benchmark for what an effective DMS should include. For example, the Integrated document and records management solution (eThekwini Municipality, 2010) has further specifications related to the requirement for the maintenance of an audit trail, a robust security profile that can effectively facilitate a number of key functions including being able to; (i) control or limit access to records, (ii) provide effective encryption; (iii) facilitate the development of digital Signatures and watermarks and finally being able to host an effective authentication function. Gilani, Ahmed and Abbas, (2009) and Bakırlı *et al.*, (2014) present empirical work that supports the need for the above-specified security functions in any document management system solution also insists that effective document management systems should have robust back-up, recovery procedures and archiving facilities that are integrated into the system. Each of these above requirements should be integrated into the system as automated procedures. From the above review of the functional contributions of the Integrated document and records management solution (eThekwini Municipality, 2010), it represents an important practice requirement in use within eThekwini. Any suggested DMS option would have to satisfy the requirements set out in the Integrated document and records management solution (eThekwini Municipality, 2010).

Another key practice and policy directive of note is the Information Service Data Storage Management Policy (2012). This policy specifically governs the way that eThekwini Municipality's Information Technology (IT) systems and services are operationalised to ensure effective performance of the municipality. The policy focusses on the local expectations as related to the storage and management of eThekwini's data and information. Developed by the municipality Information Services directorate, the policy stipulates the requirements and service expectations for managing the exponentially growing volume of data and information that eThekwini municipality has. It is notable that the policy document's conceptualisation is singularly attributed to the Deputy Head of Systems delivery and Security.

This Policy imperative does not query whether electronic document management systems should be adopted but rather, works on the premise that this is a non-negotiable

progression and one where special understanding should exist among potential users. Even with this pre-determined preference, the policy acknowledges that electronic document management can be a valuable asset but the municipality's performance in respect of this has been restricted by a number of challenges that include a lack of data storage capability and limited policies that protect against unauthorised access and data loss. The policy's directive component has been attributed to the determinations made by the Deputy Head (Systems Delivery and Security) and could be critiqued for an apparent lack of objectivity. Even so, it is equally notable that the focal procedures within the policy and indeed the areas that are stipulated as priorities for eThekweni municipality are in agreement with other empirical works including Carr (2005) and Bechini, Tomasi and Viotto, (2008). The noted agreement between empirical guidance and policy requirements is particularly noteworthy in the context of a review that is heavily biased toward empirical sources of evidence as it challenges the widely held view that policy is often driven by anecdotal rather than empirical motivation.

Archiving and storage of documents represents an important aspect in the document management discourse at eThekweni and to ensure sound practice in this respect, the municipality has an Information services general archiving and Retention policy (2012). The policy is premised on understanding that General backup and archiving allows for different types of Information Systems Data to be retained for specified periods. In the period of retaining Data is defined by the National archives of South Africa Act of 1996. The policy further affirms eThekweni municipality's commitment to ensuring that Data is backed up and archived so as to preserve history, meet legal standards, optimise the cost of Gen information services and finally, in ensuring that redundant data can be destroyed in line with national legal requirements. The information services general backup and archiving retention policy outlines a number of controls that are deemed to be key implementable to ensure effective risk assessment and legal compliance. Once again, and the policy documents and its creation fall under the leadership of the Deputy Head (Systems Deliver & Security).

In determining the controls for general archiving and retention, two critical best practices are described in these are: (i) back-up and (ii) archiving. With respect to each of these,

General principles related to ensuring that business requirements are met are integrated into the policy have been used to guide the processes designed to ensure data integrity, appropriate retention periods and to maximise the overall system security. A critical analysis of the policy highlights that its requirements could be implementable even in the context of electronic document systems. This suggests a level of policy-readiness with respect to the movement from current manual processes to Electronic Document Management System (EDMS) options.

2.12 CONCLUSION

Chapter Two set out a roadmap for the Literature Review and highlighted its purpose. A summary of the various literature typologies followed. The Data search strategies together with the inclusion and exclusion criteria were articulated. An overview of the pertinent debates surrounding paper based and electronic options were espoused and forwarded. A snapshot of the seminal contributions was then presented. Key influencing factors in Technology adoption were highlighted and the chapter concluded with a review of the pertinent local policy context. The aim of this chapter was to review and assess the literature to determine the state of knowledge and identify the gaps in the knowledge. Chapter Three follows with the Theoretical and Conceptual Framework.

CHAPTER THREE

THEORETICAL AND CONCEPTUAL FRAMEWORK.

3.1 INTRODUCTION

In the previous chapter, the literature review; a critical appraisal of the state of knowledge as it relates to technology acceptance and quality management within document management practice was offered. In addition to providing a state of knowledge within the topic area, the review highlighted areas where there is evidence of knowledge gaps, areas of agreement and disagreement between theorists and previous research on document management practices. This process sets the scene for validating the focus of the current study as being a critical area where there is an ongoing need for further understanding. To that end, the literature review supported the study's global aim of conducting a comparative analysis of the acceptance of document management systems in order to evaluate their impact on total quality management in selected clusters in KwaZulu-Natal, South Africa. Within this, the study has several objectives, some of which relate to concepts that need to be clarified and operationalised for use within the current study. The current chapter, therefore, provides an overview of key theoretical concepts that will form the central thinking behind the study, namely, the Technology Acceptance Model (TAM) and Theories related to Total Quality Management (TQM).

Polit and Beck (2004) and Creswell (2009) and others write about the processes that researchers should follow in conceptualizing and implementing research. Related to the current study, they indicate that, after an initial identification of the research problem and the presentation of a critical review of literature, the researcher should present the theoretical framework and important concepts that will be central referred to as a basis for informing a valid understanding of the phenomena under investigation. Parahoo (2003) and Lo-Biondo and Haber (2016) offer support to this view and further articulate the added purposes served by theories and models in research. They conclude that foundational models and guiding theories provide a basis upon, which the researcher will be enabled to:

- Identify the key concepts that are central to the phenomena under study;

- Develop valid data collection tools that accurately investigate the issues under investigation;
- Make findings meaningful;
- Integrate knowledge into coherent systems; and
- Stimulate new research and explain relationships between them.

Adapted from Parahoo (2003).

Furthermore, Polit & Beck (2004) identify that, theoretical frameworks implicitly or explicitly (i) highlight key study variables; (ii) propose relationships to be tested, and (iii) can guide data collection and intervention protocols for relevant studies. Guided by the collective assertions quoted above, this chapter furthers the critical consideration of relevant theory but specifically focuses on the theoretical and conceptual contexts of technology acceptance and total quality management within document management processes.

As a pre-cursor to the chapter and to facilitate meaningful engagement within the current chapter, it is important to offer clarity on what theoretical frameworks are and most importantly, the intended use within any specific study. Caruth (2013) supports this as a critical initial step because, as he suggests, “theoretical frameworks are a concept that novice and experienced researchers find confusing” (Caruth 2013:36).

All in all, one can conclude that conceptual models act as a guide for the study. They enable a conceptual mapping of themes from the literature and importantly offer guidance and possible boundaries for the research (Polit & Hungler, 1992).

For reference within the current study, it is important that the use of terminology used in this work is foregrounded by initial clarification and operationalisation. According to Parahoo (2006), a theory refers to “a supposition or a system of ideas intended to explain something or relationships between general principles within the phenomena to be explained” (Parahoo, 2006:27).

By comparison, a framework is aptly defined as a conceptual understanding of the study which includes an overall rationale and a range of relevant definitions of key concepts (Polit & Beck 2012). As a key differentiating point, theoretical frameworks are surmised as, systems of ideas that explain the concepts that are central to any identified phenomena (Byrne 2001). Conceptual frameworks relate to untested combinations of ideas that a researcher may develop to explain their area of phenomena of interest. Simply expressed, the consideration of theoretical frameworks will ensure that the concepts central to this study are well defined and most importantly, the factors / variables central to each will be highlighted so that the researcher can ensure their inclusion in any resulting data collection tool.

As part of developing this aspect of the study, the researcher presents a theoretical basis for the development of a conceptual framework that can assist in the identification of relevant study variables. This initial aspect will enable the proposal of relationships to be assessed and tested. Within the study and within the context of the primary research questions, a number of theories, most notably, the Technology Acceptance Model (TAM) (Davis 1986); the Theory of Reasoned Action (Fishbein & Azjen 1975) and Total Quality Management theories will be utilized as primary guiding theories, from which, the researcher will outline the variables of interest within the study and indeed, the factors that have to be centrally considered when exploring technology acceptance in eThekweni, KwaZulu-Natal. It is noteworthy that this study has utilized more than one theory as a confirmation of the complexity of the research problem. For ease of consideration, each of the theories is presented independently initially, followed by a summary that discusses the interplay of each of these theories as they relate to the current research problem.

3.2 THE TECHNOLOGY ACCEPTANCE MODEL (TAM): A CONCEPTUAL OVERVIEW.

Despite their obvious financial impact on business running costs, document management systems have received limited critical appraisal, a fact observed by Gaffoor and Cloete (2010), whose work on public management systems in South Africa, shows a need for an increasing and concerted focus on developing new efficiencies within business processes. With regard to print-based versus paperless document management systems, the uptake of the latter option has not been as wide-spread in South Africa, as has been the case in more developed countries. This lack of progression represents a noteworthy problem in terms of environmental sustainability, financial efficiency and socioeconomic progression, at the very least but importantly, there is a need for a theoretical exploration of the factors that have influenced the patterns, rate and nature of uptake behaviours with regard to paperless document management systems.

Explanatory frameworks related to the usage of new technologies have broadly focused on the psychology of technology acceptance i.e. the cognitive processes and behaviours that impede/promote technology acceptance and the system-based factors that may influence whether or not individuals seriously consider accepting and making use of the newly introduced technology. Central to these contributions is Davis' (1986) seminal contribution in which he proposed the technology acceptance model (TAM). This model, although theoretical, continues to be the mainstay of information-systems implementation and brings together many individual theories that have focussed in some way on issues related to the factors that influence the uptake of new technology by individuals and organisations. By all accounts, the TAM is an eclectic collation of theories, starting with Fishbein and Ajzen's Theory of Reasoned Action (TRA) (Fishbein & Ajzen 1975). Other contributory theories that have conceptual relevance to the development and continued updating of the TAM include the Theory of Diffusion of Innovations (DIT) (Rogers 1995) initially postulated in 1960, the Theory of Task-technology fit (TTF) (Goodhue & Thompson 1995), the Theory of Planned Behaviour (TPB) (Ajzen 1985, 1991) and unified

and updated revisions of the Technology Acceptance Model (TAM) (King & He 2006), including the second and third versions of Technology Acceptance Model (TAM) by Venkatesh and Davis (1996), which culminated in a Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh, Morris and Davis (2003). Regardless of the progressive theoretical variations that exist, the Technology Acceptance Model by Davis (1986) remains the mainstay theory in this practice area and as such, the clarification of key influences is guided by it.

The TAM has retained its theoretical dominance as primary theoretical model in helping to explain and predict user behaviour of information technology (Davis 1989; Surendran 2012). Even so, it is important to acknowledge that in itself is considered to be an extension of theory of reasoned action (TRA), first proposed by Ajzen and Fishbein (1975). In its many guises, several other contributions by some including Davis, Bagozzi and Warshaw (1989) and Venkatesh *et al.* (2003) propose revised versions of the TAM. All are similar in that they explain why users accept or reject information technology. In its basic presentation, the theory provides a basis with which researchers and others may be able to determine how external variables influence belief, attitude, and intention to use. Principally, the theory focusses on two cognitive beliefs: 'perceived usefulness' and 'perceived ease of use'. Of any newly introduced technology. The TAM asserts the view that, one's actual use of a technology system is influenced directly or indirectly by their behavioural intentions, attitude, perceived usefulness of the system, and perceived ease of the system. TAM also proposes that external factors affect intention and actual use through mediated effects that impact perceived usefulness and perceived ease of use of that technology or innovation (Davis et al 2003).

The Technology Acceptance Model (TAM) was introduced by Fred Davis in 1986 as the central focus of his doctoral proposal. On completion of his study, he was able to use the TAM to explain computer usage behaviour by focusing on key determinants of computer acceptance that were found to be important in explaining users' behaviour across a broad range of end-user computing technologies and user populations. As noted above, the TAM, in its foundational format seeks to test two specific beliefs: Perceived Usefulness

(PU) and Perceived Ease of Use (PEU). For clarity, each domain is clarified as initially defined by Davis (1989). Perceived Usefulness is defined as the potential user's subjective likelihood that the use of a certain system, e.g. an electronic document management system, will improve his performance across document management processes. On the other hand, Perceived Ease of Use refers to the degree to which the potential user expects the target system to be effortless (Davis 1989). The belief of the person towards a system may be influenced by other factors referred to as external variables in TAM. Figure 3.1 below provides a diagrammatic summative overview of the TAM as initially proposed by Davis (1989).

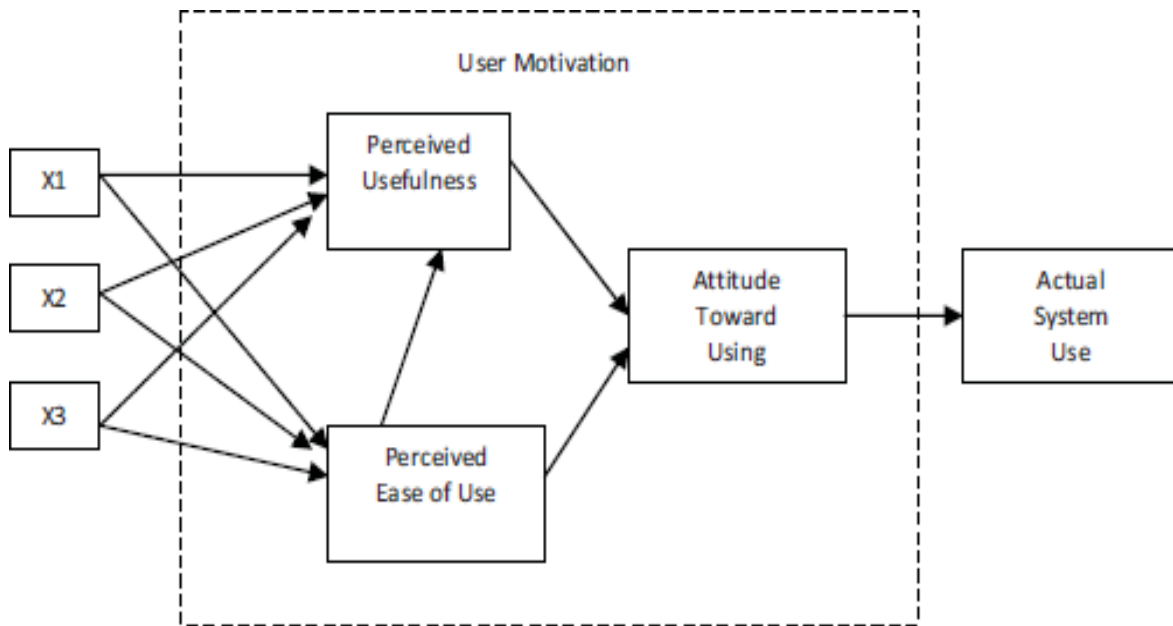


Figure 3. 1 Davis' Original Theory of Technology Acceptance (Source: Davis, 1986)

Davis' original conception of the TAM has been revised by himself and others over the course of time with the most current version showing inclusion of wider determining variables as indicated below in Figure 3.2.

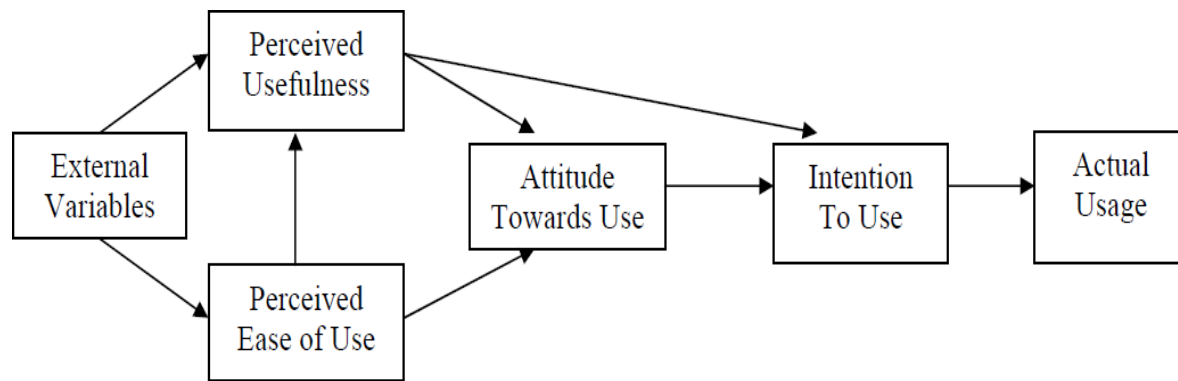


Figure 3. 2 First Modified Version of Technology Acceptance Model (TAM)
(Source: Davis, Bagozzi and Warshaw 1989)

It should be noted that Davis (1985) attributes the genesis of his TAM to the Theory of Reasoned Action by Fishbein and Ajzen (1975) which identifies that primarily, an individual's intention to adopt a behaviour is the single most important predicting factor in their decision to act. Fishbein and Ajzen (1975, 1991) importantly highlighted that the determination of behavioural intention is a result of the combined interplay between a person's attitudes toward that behaviour; their perceived control of the behaviour and any subjective norms that they would have assumed with respect to the behaviour or in this case, the adoption of a new technology. The TRA is depicted below in Figure 3.3 below.

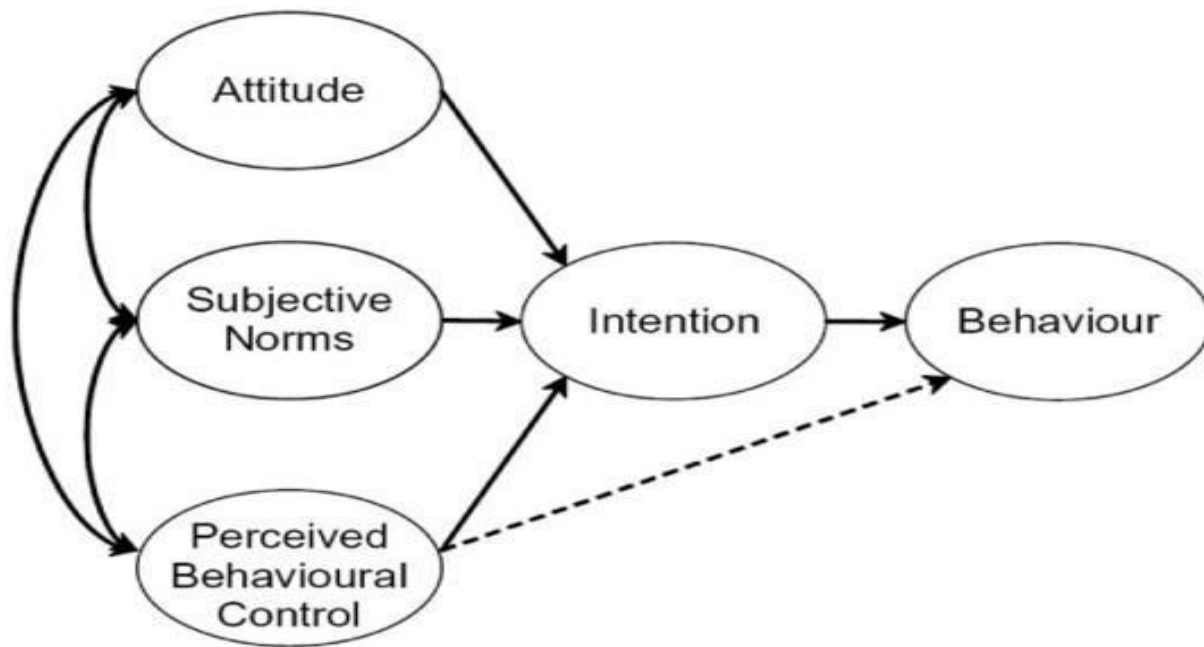


Figure 3. 3 Theory of Reasoned Action (TRA) (Source: Fishbein & Azjen,1975)

As an adjunct theory to the acceptance theory, Venkatesh *et al.* (2003) offer a theoretical contribution that discusses in greater detail, the nature of how adoption of technology can be exhibited by individual users. Parasuraman and Colby (2001) introduced the concept of technological readiness. Technology readiness (TR) refers to people's propensity to embrace and use of new technologies for accomplishing goals in home life and at work (Parasuraman & Colby 2001). Based on individual's technology readiness score and the technology readiness, Parasuraman and Colby (2001) further classified technology consumers into five technology readiness segments of explorers, pioneers, sceptics, paranoids, and laggards. This is similar to Rogers (1995) adoption curve of innovators, early adopters, early majority, late majority and laggards. As they relate to technology acceptance and the current study of acceptance behaviours in KwaZulu-Natal, understanding the role played by Technology readiness is vital for understanding the ways in which implementation success may be predicted. Clearly, the pace with which individuals are able to accept new technologies has an important influence on organisation performance across a wide range of areas. Within the KwaZulu-Natal context, there have been a number of deliberations about the pace at which management

has insisted on the adoption of new technologies and Rogers' work may help to explain the emerging adoption patterns within practice. Rogers' work on the 'diffusion of innovation' is as important as a study within the study area as it is based on the synthesis of over 500 diffusion studies and came out with the 'diffusion of innovation' theory for the adoption of innovations among individuals and organisation. The theory, as acknowledged above simplifies the way in which we understand the range of processes by which an 'innovation is communicated through certain channels over time among the members of a social system"

Basically, the theory explains that the innovation and adoption happened after going through several stages including understanding, persuasion, decision, implementation, and confirmation. Importantly, he was able to propose the likely distribution adoption in his famed Rogers (1995) S-shaped adoption curve, that illustrates the innovators, early adopters, early majority, late majority and laggards as depicted below. Simply put the theory seeks to explain how, why and at what rate over time an idea or innovation gains momentum and diffuses. There are five adopter categories.

- 1) Innovators - they are people who are interested in new ideas and innovations, always prepared to take risks and try new products or ideas out.
- 2) Early Adopters - these are people that are quite comfortable with new innovation and ideas and willing to try new things. They are normally in leadership roles.
- 3) Early Majority - these are people that will adopt new ideas; however, they will want evidence of how the new innovation or idea is performing.
- 4) Late Majority - in this category are the sceptics, people that are wary. They will only come on board after most of the people have attempted the idea or innovation.
- 5) Laggards - the conservative ones are located here. These are the most difficult people to convince.

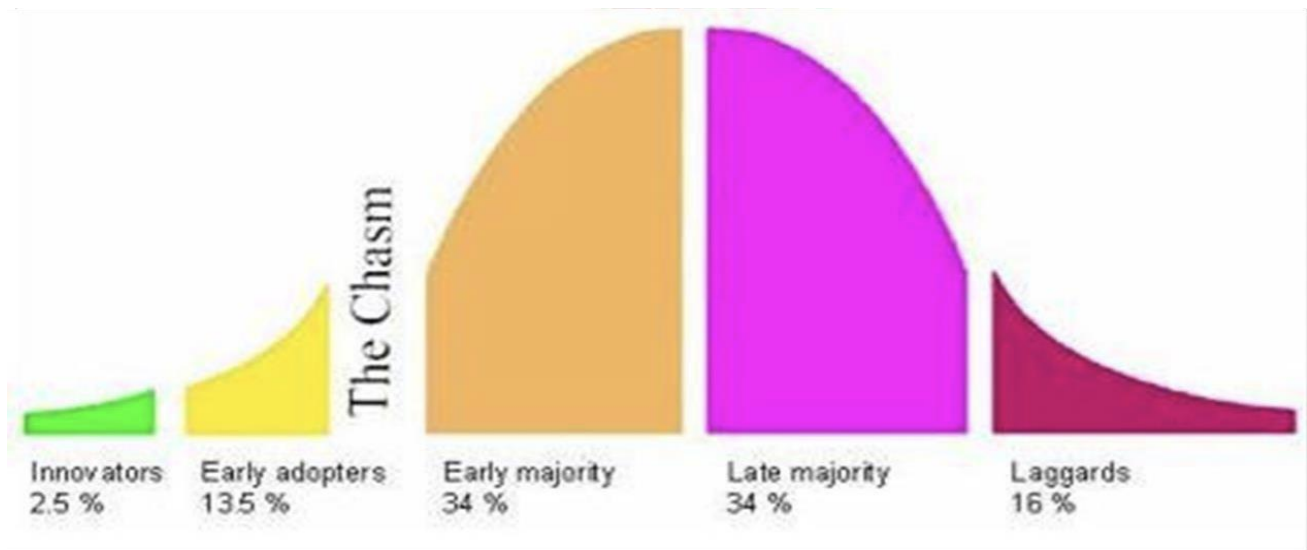


Figure 3. 4 S-Shaped Curve (Source: Rogers, 1995)

With each progressive theoretical contribution, the TAM has been updated and seminally, Venkatesh, Morris and Davis (2003) conducted a formal study of previous models/theories and from that developed the Unified Theory of Acceptance and Use of Technology (UTAUT) shown in Figure 3.5 below. The UTAUT is premised on the acceptance of four predictors of users' behavioural intention and these are performance expectancy, effort expectancy, social influence and facilitating conditions. These constructs are similar to original Davis' factors and include perceived usefulness, extrinsic motivation, job-fit. A summative overview of the revised model is presented below.

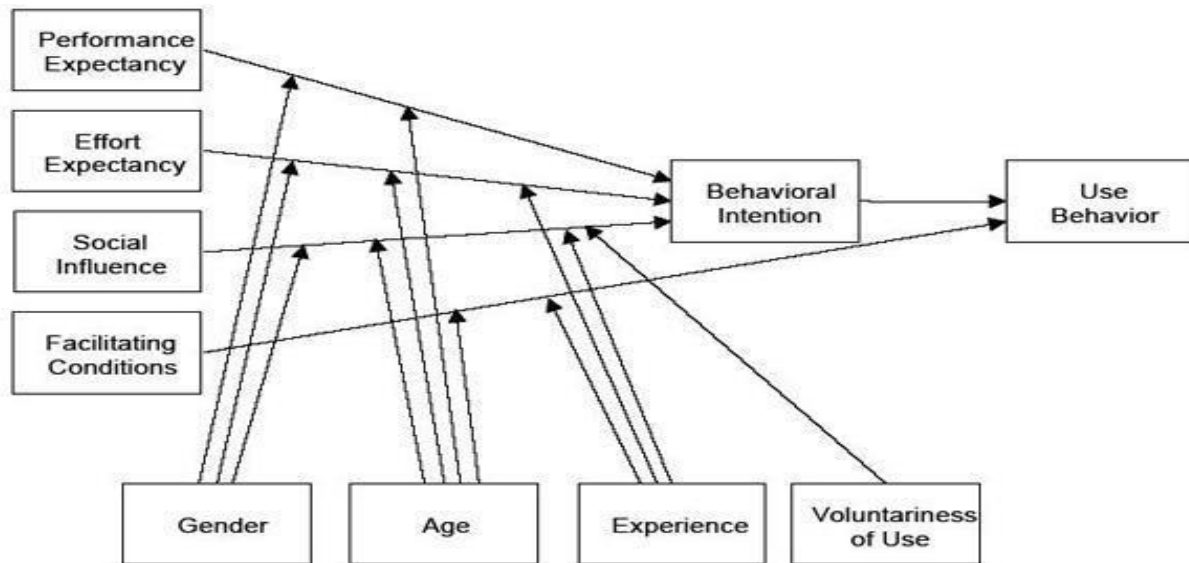


Figure 3. 5 The Unified Theory of Acceptance and Use of Technology (UTAUT).
(Source: Venkatesh, Morris & Davis, 2003)

The above highlighted theoretical contributions have been utilised as the foundation for understanding the factors and influences that are noteworthy in understanding technology acceptance motivation and resulting behaviours. Summatively, the current research integrated these and has identified factors that will be specifically studied. These are included in the study's data collection instrument (see Appendix 1).

3.3 TOTAL QUALITY MANAGEMENT THEORY (TQM): A CONCEPTUAL OVERVIEW.

Some researchers, including Miranda Silva *et al.* (2014) suggest that strategic decisions related to choice, usage and overall quality contribution of document management systems within business have their historical roots, in the total quality management discourse and constructs related to technology acceptance. As such, the theoretical grounding of the study refers both to theory related to total quality management and

technology acceptance theoretical areas. The former i.e. total quality management theory is particularly important because it confirms the widely held view that much of the changes that are introduced in industry are a result of the competitive pressures and the need to satisfy the range of customers that any service has to satisfy. In this regard, Total Quality management represents an important strategy for ensuring stakeholder satisfaction. For the purposes of the current study, it is important that a sound understanding of founding philosophies, concepts and primary principles is elicited.

Although a long standing issue, the importance of TQM as a strategic focal point is a recent emergence and some, including Jung and Wang (2006) see it as a reaction to the growing customer demands for quality 'fit-for-purpose' products. With regard to the development of document management systems, total quality management is the primary motivation for effecting any change in the choice of system that an organisation that uses.

3.3.1 DEVELOPMENT OF TQM THEORY

Coined in 1985 by the USA navy, the theory of Total Quality management (TQM) is conceptualised ...

as a set of strategies for continuously improving performance at every level, and in all areas of responsibility. It combines fundamental management techniques, existing improvement efforts, and specialized technical tools under a disciplined structure focused on continuously improving all processes. Improved performance is directed at satisfying such broad goals as cost, quality, schedule, and mission need and suitability. Increasing user satisfaction is the overriding objective.(Porter 1996:23).

Duran (2014) sees this as performance improvement efforts across nine distinct categories including: (1) Leadership, (2) Strategy, (3) Customers, (4) Measurement, (5) Analysis, (6) knowledge management, (7) Workforce, (8) Operations and (9) Results. To this end, TQM represents a critical framework the evaluative processes within which the proposed study will be based. In other words, the assessment of the differing document management processes will be guided by the concepts articulated within TQM.

The conceptualisation of total quality management has been informed by a number of approaches which include theoretical contributors who articulate and discuss it in terms of progressive “quality eras” that have occurred. These represent approaches that can be used and in terms of how it is seen by different stakeholder entities in any ‘customer-provider’ relationship. With regard to the former approach, different contributors including Silva *et al.* (2014) discuss TQM as a central contributing concept within the developing quality movement. Along with this, they assert the view that four distinct eras exist namely, (i) Inspection (ii) statistical quality control; (iii) quality assurance and (iv) strategic quality management. When considered, each of the ‘eras’ represent the different priorities, and (by inference), the concepts that have become central to the understanding of quality. For example, the “inspection era” represents, those aspects and conceptual framings of TQM, that emphasise adherence / compliance to standards and therefore, the assessment of quality of a product, such as an electronic document management system, is based on the extent to which the proposed new process or system can conform to expected performance standards.

The second era, originally referred to within “Shewart’s control chart” (Gimenez-Espin, Jiménez-Jiménez & Martínez-Costa, 2013) was modelled on the principles of statistical process control (SPC); an approach in which quality is measured and assessed on the basis of the consistency with which a system or process is able to deliver high quality products. Within this era, the primary definer of quality is centred on differentiating between acceptable and unacceptable fluctuations/variations in the way that a quality product is produced. Similarly, the Quality assurance era is characterised by the conception of TQM as being about more than just about narrow “manufacturing-based concerns” to being about ensuring that quality is of concern in the design of a product even in aspects that the customer may not have a declared interest in.

The latter aspect of TQM serves as the basis for considerations that give priority to issues such as “environmental friendliness” of a process; or the “motivational aspects related to a process”, as key elements of any quality assessment of any system or process. importantly, this emphasises the wide range of concepts that should be assessed within an evaluation of the quality of a process or system. Some including Dotchin and Oakland

(1992) and Lawler III (1994) have provided detailed articulations of the elements that should be of interest in any quality assessment and these include (but are not exclusive to), customer satisfaction; visible efficiencies and deficiencies of a system; the quality in the research and development investment given to a process or utility; efficacy in implementation. To this end, the current study factors in each of these within its data collection process to facilitate an in-depth exploration.

3.4 A SUMMATIVE OVERVIEW OF KEY ELEMENTS OF TOTAL QUALITY MANAGEMENT

Literature on Total Quality management has been collated and reviewed by a number of theorists including (Excellence 2001) and Holmes and McElwee, (1995) with the primary aim of providing a conceptual overview of what its key elements are. Some including Zbaracki (1998) suggests that there are six major components to TQM;

- Management commitment and leadership
- Employee involvement
- Continuous improvement
- Supplier Quality assurance and management.
- Customer focus
- Education and training

The table below provides a summative overview of each of these components and within it, the key expectations and issues of interest (as related to each component) are described.

Table 3. 1 Six Components to TQM (Source: Author's Own, 2019)

Key Component of TQM	Related Expectations and Requirements
Management commitment and leadership	<ul style="list-style-type: none"> • Evidence of commitment to facilitating change. • Instilling a clear organisational vision. • Commitment to customer satisfaction. • Engagement of employees in strategic prioritisation. • Exemplifying expected behaviours. • Commitment to quality assurance.
Employee involvement	<ul style="list-style-type: none"> • Commitment to new ways of doing business. • Employee potential. • Mutual employee commitment to development of an efficient working environment. • Authority to implement improvement.
Continuous improvement	<ul style="list-style-type: none"> • Instilling continuous improvement attitudes across the organisation. • Clear information on needs of customer base. • Provision of an environment that allows for minor and major innovation or improvements.
Supplier quality assurance and management	<ul style="list-style-type: none"> • Prioritisation of quality in supplier selection processes. • Minimisation of supplier confrontation. • Promotion of long-term partnerships in quality enhancement.

Key Component of TQM	Related Expectations and Requirements
Customer focus	<ul style="list-style-type: none"> • Effective systems for translating customer requirements into design and process requirements. • Creation of work ethos that promotes “customer delight” • Acceptance of importance of both internal and external customers.
Education and training	<ul style="list-style-type: none"> • Management commitment to education about the product, relationships and employee development. • Commitment to development of a learning environment. • Commitment to developing employee competence through training.

3.5 AN INTEGRATED MODEL FOR TOTAL QUALITY MANAGEMENT.

The above discussions provide an overview of the different concepts and/or elements of TQM. Geraedts, Montenarie and Van Rijk (2001) and Tapiero (1990) acknowledge that TQM is, by its very nature, a complex phenomenon because of the many considerations that should be made in understanding what quality is and who it is who is defining it. Deming (2001) cited in Swinton, (2004) proposes a building-block theory of TQM which attempts to collate the differing aspects of TQM into a diagrammatic representation below.

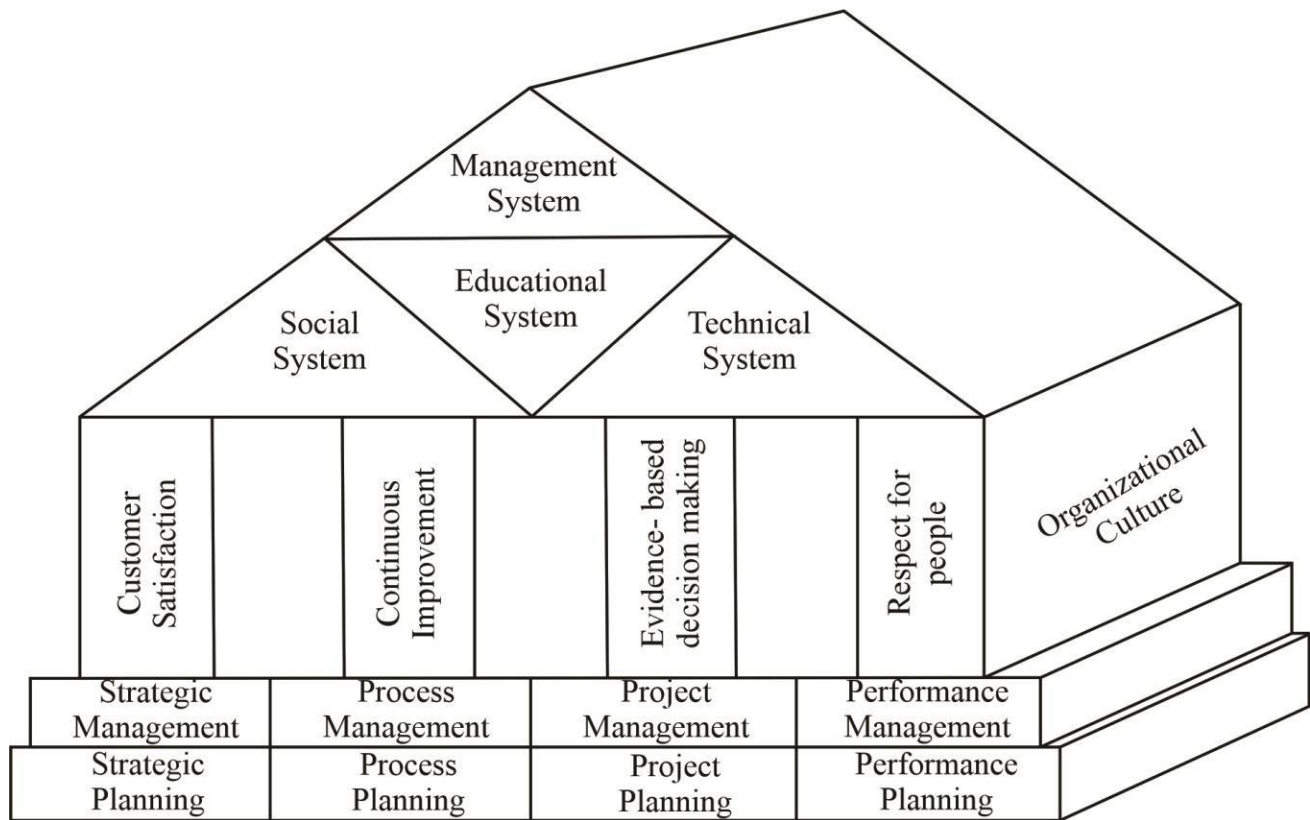


Figure 3. 6 The House of Total Quality Model (Source: Voehl, 1992)

The above “House of Total Quality Model was initially posited by F. Voehl in 1992 and is made up of six elements that combine house and architectural metaphors with important quality concepts to describe the different aspects that should be considered within any quality discussions. Voehl’s six elements include:

1. Subsystems of the organisation, such as management system, education, social and technical subsystems (roof).
2. Continuous improvement of customer satisfaction, basing decisions on facts and respect for people (pillars of quality).
3. Strategic management, processes, projects and tasks (base).
4. Strategic planning of processes, projects and tasks (benches).
5. Development of organization (mortar).

6. Corporate culture (the wall).

Sourced from - Mani et al. (2003: 610).

The above-identified House of Total Quality model shows the wholly inclusive approach to quality management and any implementation of any quality management process should be centred on the operationalisation of key organisational processes, methods and techniques. This wide-encompassing view has been used within the current study to inform that way in which quality issues have been explored.

Finally, it is important to note that there are three generic approaches to Total Quality Management (TQM) that should always be centrally considered (Harris 1994). Firstly, there is a customer focus where the emphasis should be about assessing quality from the perspective of the customer. The second approach has a staff focus and is concerned to value and enhance the contribution of all members of staff to the effectiveness of an institution's operation. Attendance to this imperative means giving increased priority to the views of employees on what they perceive to be quality. The final approach related to compliance and conformity to specification of any process and in this respect, this was a key consideration within the current study.

3.6 APPLICATION THE THEORETICAL FRAMEWORK IN THIS STUDY

As indicated earlier, the combined exploration of concepts related to technology acceptance and total quality management is used as a basis to guide both the data collection and analysis processes. To that end, the resulting data collection procedures are designed to ensure inclusion of each of the factors/influences and variables that the theories highlighted. Furthermore, the decision to collect data from the varied perspectives of different stakeholders within the document management sphere was largely informed by explorations of relevant theoretical framings of the subject under study.

Upon establishment of key constructs and concepts, the researcher was able to progress towards confirming the methodologies to be utilised within the study. The next chapter is focussed on this.

3.7 CONCLUSION

Chapter Three focussed on the theoretical and conceptual framework. The point of departure was elucidating what the theoretical framework entailed and their intended use. The Technology Acceptance Model was then introduced, and a conceptual overview presented. Davis's original TAM theory was proposed followed by the expanded modified later version thereof. Further models that were introduced and discussed that were crucial to the study included TRA and the UTAUT theories. Their theoretical contributions as the foundation for understanding the factors are noteworthy in understanding acceptance motivation and resulting behaviours. A conceptual overview of Total Quality Management followed. An extended discussion with regard the development of the TQM theory was furnished. This was followed by a summative overview of the key elements of TQM. The chapter concluded with application of the theoretical framework in the study. Chapter Four follows with the research design and methodology for the current study.

CHAPTER FOUR

RESEARCH DESIGN AND METHODOLOGY

4.1. INTRODUCTION

In common parlance, research refers to a search for knowledge. Man possesses an innate desire of curiosity and inquisitiveness when confronted by the unknown. This voyage from the unknown to the known prompts us to probe, investigate and attain a clearer and fuller understanding of the unknown. This journey or quest for obtaining knowledge can be termed as research (Kothari & Garg 2014). Research assists us to have a better or a more informed understanding of nature and natural phenomena and helps find answers to our questions.

When one alludes to the fact that a research study is being undertaken, you are according to Kumar (2011:5) implying that the process being applied, fulfils the following criteria and expectations, namely, i) it is being undertaken within a framework of a set of philosophies, ii) uses procedures, methods and techniques that have been tested for their validity and reliability, iii) and that it is designed to be unbiased and objective. These methods, when adopted add legitimacy to the research study. This scientific research is thus attained using stringent methodologies and rigorous techniques. Put in another way, to qualify as scientific research that eventually leads to scientific knowledge, the process must display the following characteristics: it must as far as possible, be controlled, rigorous, systematic, valid, and verifiable, empirical and critical.

From the outset, this chapter outlines the methodological considerations that were taken account of in developing the study's research design and in selecting the most appropriate methodologies for fulfilling the primary study objective of exploring the acceptance of document management systems in order to evaluate their impact on total quality management. As a final consideration, the chapter will conclude with a rigorous exploration of the ethical considerations that needed to be made ahead of data collection. That said, as a means of setting the scene for the discussion of methodological considerations, it is important to revisit the primary research problem, the study aim and objectives that offer the critical directive impetus to the study.

4.2. RESEARCH PROBLEM

Cost and operational efficiency; environmental sustainability and overall quality aspects collectively represent critical “make or break” considerations for business owners (Arney; Jones & Wolf, 2013; van Wyk, Dahmer & Custy, 2004). Print running costs for example, can, in some business-types, account for 50 percent of their running costs. Despite their obvious financial advantage, some forms of document management systems e.g. paperless options, have not received the expected uptake and in some instances, print-based options continue to see increasing usage patterns, particularly within developing economies. The need for a more theoretically founded understanding of the strategic imperatives that guide choice of document management system represent an aspect of this noteworthy problem that remained central to the study’s objective.

4.3. PRIMARY AIM AND OBJECTIVES OF THE STUDY

The primary aim of the study was to conduct a comparative analysis of the acceptance of document management systems in order to evaluate their impact on total quality management in selected Clusters in KwaZulu-Natal, South Africa. In achieving the global aim, the researcher had a number of specified objectives that included both qualitative and quantitative lines of enquiry as indicated in the summary provided.

- Conducting a desktop review to identify and review alternative document management systems as a first step toward identification of best practice.
- Conducting a status analysis of primary processes within the municipality’s administrative unit to determine the range of document management systems that are in operation.
- Determining total quality performance of each of the identified document management systems within eThekwini using Duran’s (2014) categories.
- Assessing and critically evaluating the factors that influence technology acceptance as applied to each of the identified document management processes within eThekwini.

- Applying total quality management categorisation as the framework for exploring strategic priorities as they relate to the identification and utilisation of specific document management options.
- Identifying and critically assessing the strategic priorities that influence technology adoption as it relates to, choice of document management processes within the municipality.
- Developing a total quality and technology acceptance framework that described the characteristics of an effective document management system.
- Developing a theoretical framework and specification for an effective document management system for implementation within municipalities and other related public service areas.

4.4. RESEARCH CONTEXT

The study was conducted in the eThekweni metropolitan and data collection, took place within the natural employment contexts of the municipal employees. The eThekweni Municipality was chosen as the focus of the current study for a number of reasons. eThekweni is the largest city in the province. It is a Category A Municipality. According to the latest 5 year plan ,the IDP (2017/18)the City emphasises its ongoing commitment to address Global Agenda's for example ,The Paris Agreement ,The AU Agenda and many of the Global commitments that the City is and has committed to .The City is also an active role player, engaging and part of influencing policy and Strategy at Global ,National, Provincial and Local government levels. This research setting offers an important background and context within participants operated in relation to their decisions to take up the electronic document management systems within their workplace. eThekweni Metropolitan Municipality was formed in the year 2000 and primarily includes Durban and surrounding towns and forms one of the 11 districts of KwaZulu-Natal province of South Africa. Durban is the third most populated city in South Africa after Johannesburg and Cape Town and has a population of 2.34 million people (Stats-SA, 2017). The municipality caters for a population of 3,442,361 (Stats-SA, 2017). most of whom who speak Zulu. Demographically, up to 63% of eThekweni's residents speak

Zulu, followed by English, which accounts for 27% (Stats SA, 2011 Census). By gender, 51.1% of the municipality's population is female with the remaining 48.9% being male.



Figure 4.1 Map of eThekweni (Source: eThekweni Metropolitan Municipality, 2019)

4.5. RESEARCH PARADIGM

Polit & Becker (2014) define epistemology as the philosophical study of the nature, origin, and limits of human knowledge. Similarly, others such as Holloway (2005) believe that paradigm refers to a pattern containing a set of legitimated assumptions and a design for collecting and interpreting data and within research, three dominant paradigmatic philosophies and assumptions are described. In short, the research paradigm is summarised as a way of looking at natural phenomena such that the researcher's assumptions form the basis for how one decides to approach the inquiry (Polit & Beck 2008:761). In summary, a paradigm refers to how one views a phenomenon in the world.

Within the current study, a number of research paradigms were deemed relevant and as such, each is discussed below.

4.5.1. POSITIVISM (ASSOCIATED WITH QUANTITATIVE RESEARCH)

Positivism is an epistemological position within research, that utilises the rules of the natural science research model as the basis for investigations of social phenomena and explanations of the social world (Creswell, 2009:03). Additionally, positivism represents the traditional scientific approach, which puts forward the view that reality can be objectified and numerically represented (Polit & Beck 2008:762). A basic understanding within positivism is that there is a reality that can be studied and whose underlying causes can be mathematically determined. The scientific nature of positivism centres on a belief that reality is objective and unaffected by personal beliefs and biases. With this understanding, it becomes clear that Positivism cannot be used as the only epistemological basis for the current study as the exploration of technology acceptance and uptake influences rely on more than cause-and-effect priorities.

4.5.2. INTERPRETIVISM (ASSOCIATED WITH INTERPRETATIVE PHENOMENOLOGY)

The Interpretive paradigm is sometimes referred to as the phenomenological approach and is hinged on a commitment to understanding people through gaining insights into their experiences. This approach maintains that all human beings are engaged in the process of making sense of their worlds and continuously interpret, create, give meaning, define, justify and rationalise daily actions (Babbie & Mouton 2001:28). Interpretive social science is related to hermeneutics which, according to Neuman (2000:70-71), is about “interpretation” and appreciating that reality is dependent on individual internal mental processing to discover meaning. Hermeneutics has a partial resonance with the current study because some of the focus is on how individuals experience change upon the introduction of a new technology and that understanding of the phenomena should be based on the lived experience. Interpretivism may not be the perfect fit for the current

study but it offers some meaning to the way in which the chosen phenomenon is best understood.

4.5.3. CONSTRUCTIVISM (ASSOCIATED WITH QUALITATIVE ENQUIRY)

The epistemological basis for this study acknowledges and exhibits characteristics of constructivism. The constructivist paradigm, sometimes referred to as the naturalistic paradigm, is an alternative paradigm to positivism and asserts the view that reality is a result of multiple 'socially constructed' interpretations (Polit & Beck 2008). Constructivism is centred on the belief that there is no single truth "out there", but rather, there is only a narrated reality that is influenced by social processes continuously (De Vos et al. 2011). By that assessment, reality is be socially and personally constructed and the participant should be actively. In compliance with constructivism, knowledge and insights into phenomena are enhanced when the distance between the researcher and the participants in a study is minimised (Polit & Beck 2008).

4.5.4. PRAGMATISM (ASSOCIATED WITH MIXED METHOD RESEARCH)

Summatively, the current study has shown that the phenomenon under study benefits from being viewed eclectically, in a way that acknowledges and integrates assumptions from both qualitative and quantitative paradigms. As such, the epistemological foundation that best articulates the study's focus is pragmatism. As noted by Creswell (2009), pragmatism (sometimes referred to as the mixed-methods paradigm) has its basis on the assumptions that subject matter is complex, and no single epistemological position can be exclusively adopted. Pragmatism believes that priority should be given to being practical even if that involves relying on a hybrid of epistemologies. Pragmatism, therefore, represents for the current study that utilised both quantitative and qualitative methodologies.

4.6. RESEARCH DESIGN

The study adopted a sequential mixed method design. This research design focuses on the end product and all the steps in the process to achieve that outcome. It deals with a logical problem and is holistic in nature. The research design provided the researcher with a clear framework or blueprint (Bordens; Abbott & Abbott 2017). Put simply, the research design offered the general plan about what would be done to answer the research question.

4.7. MIXED METHODS RESEARCH

Mixed method studies have emerged from the paradigm wars between qualitative and quantitative research approaches to become a widely used mode of enquiry.

Creswell (2014) advances that the mixed methods research design includes the integration or combination of quantitative and qualitative research and data research study. Thomas, Wouters and Heilbron (2019) assert that as researchers started to use both qualitative and quantitative methods within a single research effort, reasons for the emergence of mixed methods research were advanced. This convergence of combinations i.e. the Mixed Methods Approach, explicitly strives to offer a platform or framework for combining methods. Creswell further highlights that the mixed methods approach can be seen as an approach to research in the social, behavioural and in the health sciences in which the researcher gathers both quantitative (closed ended) and qualitative (open ended) data, integrates the two and then draws interpretations based on the combined strengths of both sets of data to understand research problems.

Creswell expands on the subject by contending that a core assumption of this approach is that when the researcher combines statistical trends (Quantitative Data) with stories and personal experiences (Qualitative Data) this collective strength provides a better understanding of the research problem than either form of data alone (Creswell 2015:2).

4.7.1. PURPOSE AND CHARACTERISTICS OF MIXED METHODS RESEARCH

Graff (2012) highlights the purposes of mixed methods research as triangulation, complementarity, development, initiation and expansion. Creswell (2017) further clarifies that triangulation involves the use of qualitative and quantitative methods in an effort to reach convergence of findings. Complementarity refers to the use of qualitative and quantitative methods to examine the overlapping and different fact of a phenomenon in order to obtain a more meaningful understanding of the phenomena. Development involves using one method after the other so that the first method guides the second in terms of decisions made about sampling, measurement and implementation. Initiation occurs in mixed methods when paradoxes are discovered (Graff 2012). Expansion occurs as qualitative and quantitative components are included in a study to increase its scope and breadth.

Creswell and Plano (2011) identified core characteristics of mixed method research as follows:

- Collects and analyses persuasively and rigorously both qualitative and quantitative data based on the research question.
- Mixes (or integrates or links) the two forms of data concurrently combining them (or merging them), by having one build on the other sequentially or by embedding one within the other.
- Gives priority to one or both forms of data (in terms of what the research emphasises).
- Uses these procedures in a single study or in a multiple phase of a program of study.
- Frames these procedures within philosophical worldviews and theoretical lenses.
- Combines the procedures into specific research designs that direct the plan for conducting the study.

To summarise and put simply by Schoonenboom and Johnson (2017:110), the overall purpose of the mixed methods is to expand and strengthen a study's conclusion and therefore contribute to the published literature. The ultimate goal is about heightened knowledge and validity. Some of the advantages of mixed research are that; data collection methods are flexible, capture verbatim reports and objective content that can be represented both as narratives and in numerical form. Mixed method enquiry looks at the picture from both qualitative and quantitative perspectives and according to Brink & Wood (1998), offers realistic possibilities for understanding complex areas of study.

4.8. METHODOLOGY

Rajasekar; Philominathan and Chinnathumbi (2013:5) define research methodology as a systematic way of solving a problem. It is a science of studying how research is to be carried out. It is essentially the procedures by which researchers go about their work of describing; explaining and predicting phenomena are called research methodology. Rajasekar et al. further explain that it defines the study methods by which knowledge is gained. The aim centrally is to give the work plan of research. As noted above, an exploratory sequential mixed method comparative case study was conducted. The exploratory sequential method, according to Creswell (2014), is a design in which the researcher first begins by exploring with qualitative data and analysis and thereafter uses the findings in a second quantitative phase. Bain (2011) further explains that the exploratory sequential design is also referred to as the instrument development stage. The purpose is to generalize qualitative findings to a larger sample He goes on to advance that the qualitative phase is used to help develop and inform the quantitative phase. Bain (2011) further purports that the rationale behind this method is that instruments are not available, the variables are not known and there is no theory or model that serves as a guide. The figure below provides a diagrammatic representation of the study as it was conducted.

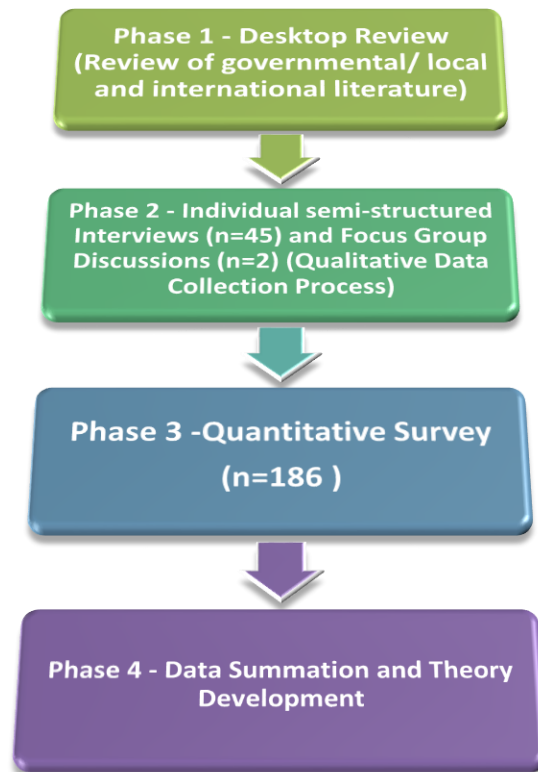


Figure 4. 2 The Study Stages (Source: Author's Own, 2019)

As represented above, the study relied on the combination of a desktop review; semi-structured exploratory individual interviews (n=45) with municipality executive and strategic managers; focus group discussions (n=2) comprising 5 and 7 participants each and a quantitative online survey (n=186), in which executive/strategic municipal employee participants provided experiential insights into the range of factors that influenced technology acceptance of differing document management systems, whilst simultaneously offering their insights on the range of impacts on “total quality” that they experienced and observed.

Phase one of the study was a desktop review of a wide range of documentary sources and it allowed for a comparative review of different document management systems that have been utilised nationally and globally. This initial phase was intended to facilitate a review of global and national practices around document management systems; and to assess total quality aspects as they related to different document management systems. Furthermore, this data was noted as being specifically important in informing the development of data collection tools used within the study. Phase two i.e. Data-collection was based on qualitative individual interviews and focus group discussions. Phase-three of the study was presented as a quantitative data collection phase based on variables elicited from the first Phase of the study. In this phase, an online survey was administered to purposively identified executive and strategic stakeholders to quantify the impacts of differing document management systems to provide a statistical overview of relationships between identified impacts and influences arising from each of the researched document management systems.

The final phase of the study focussed on validating findings and the emergent theories. Validation comprised a combination of consensus focus group discussions, and cross validating them with emerging best practices and recommendations benchmarked with international Document Management processes.

4.9 PROCEDURES FOR THE IDENTIFICATION AND SELECTION OF STUDY PARTICIPANTS

4.9.1. STUDY POPULATION

Asiamah, Mensah and Oteng-Abayie (2017) state that the study population is determined by defining participants generally implied by the research goal or objective. Further, the study population is also determined by using a selection criterion, in order to target members that possess some shared characteristics of interest. Bryman (2016: 714) very simply states that the population is the universe of units from which a sample is to be selected. The objective in research study as explained by Majid (2018:1) is to generalise

the study findings from the sample to the population of interest. The eThekweni Municipality, with over 23 000 staff has a number of operational units (*“Integrated Development Plan Annual Review”, 2016/2017*). One of which is the administrative unit whose primary function is to oversee and facilitate efficiency across the wider range of administrative processes that are central to the function of the municipality. The current study focused on strategic and executive management within the municipality.

4.9.2. THE ORGANISATIONAL ORGANOGRAM

A diagram depicting the organisational structure of the municipality at this point will be beneficial to the understanding of the complex nature of the environment.

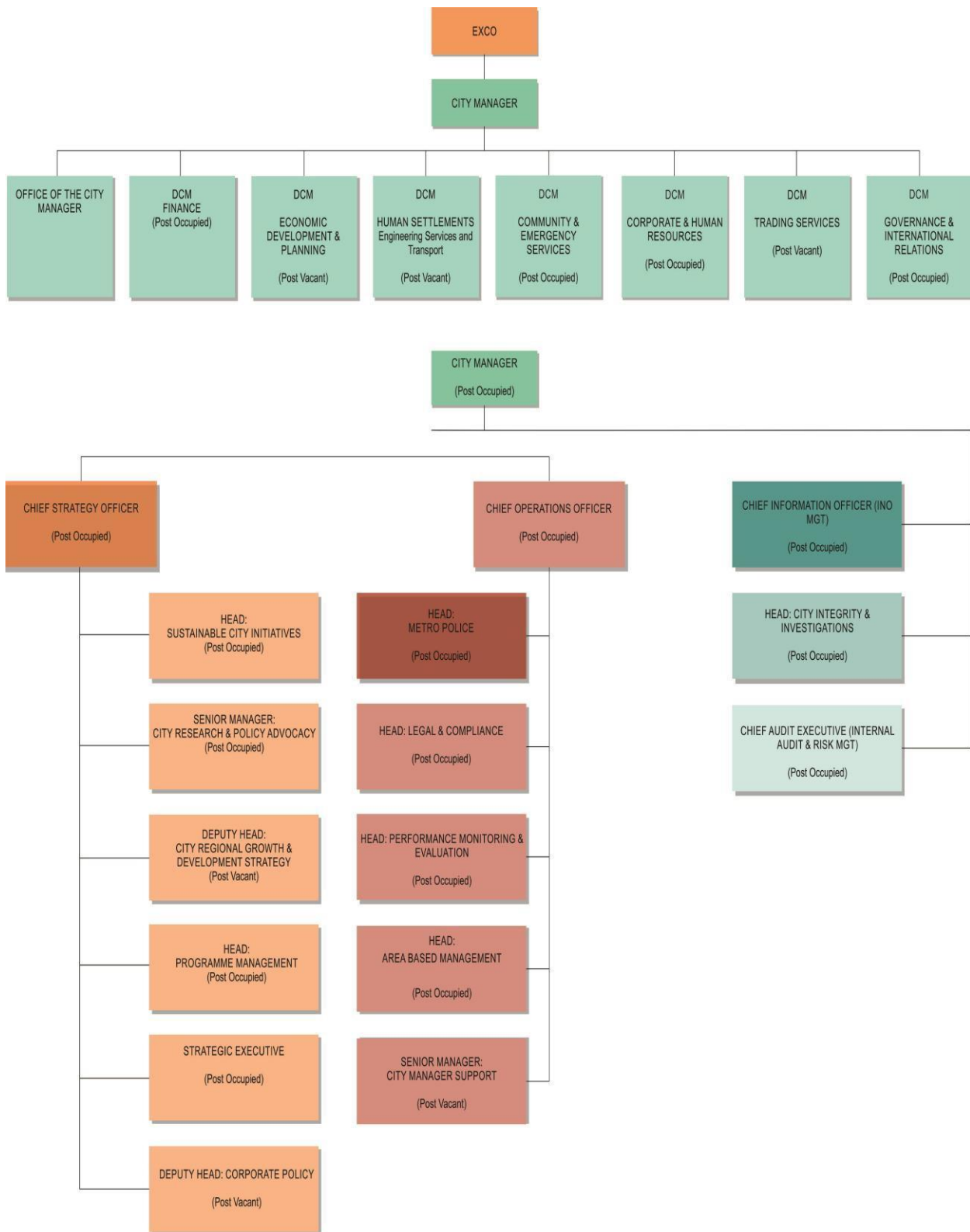


Figure 4. 3 Organisational Structure (Source: eThekweni Municipality IDP, 2017)

The municipality has the following employees in strategic and executive management positions i.e. the Mayor (n=1), the Executive Committee (EXCO) (n=10), Councillors (n=210), City Manager (n=1), Deputy City Manager (n=6), Heads of Departments (n=80), operational staff key to the Document Management Systems were also targeted (n=20) (*Integrated Development Plan Annual Review*, 2016/2017: 420). The total target population for the current study was 364 potential participants. All the above stakeholders held roles within the municipality where they had strategic oversight over a range of policies including acting as decision makers with respect to determining the choice and use of different document management systems.

4.10. THE SAMPLING PLAN

McCombes (2019) defines a sample as that specific group of individuals that you will collect data from and further states that it is simply the subset of the population. Creswell (2011:381) contributes to the discussion by adding that the sample is the group of participants in the study selected from the target population from which the researcher generalizes to the target population.

During the first Phase of the current research study a review of secondary data was conducted, which required no specific sampling strategy, except that data was identified if it was deemed relevant to the student focus. Phase two of the research study was the semi structured interviews and focus group discussions.

4.10.1. PHASE 1 SAMPLING PLAN (FOCUS GROUP DISCUSSIONS AND INDIVIDUAL INTERVIEWS)

Nastasi (2011) in “Qualitative Research: Sampling and Sample Size Considerations” refers to Sampling as the selection of individuals, Units and or /settings to be studied. Whereas quantitative studies strive for random sampling, qualitative studies often use purposive or criterion-based sampling. It further explains that the difference in sampling strategies between quantitative and qualitative studies is due to the different goals of each research approach. There are several types of non – probability samples that researchers use. Three of the most common sampling methods used in qualitative research are

purposive sampling, quota sampling and snowball sampling. Non-Probability Sampling as a technique for which a person's likelihood of being selected for membership in the sample is unknown (Blackstone 2014).

Paliuckas et al. (2015) explain that purposive sampling is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources. This involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest (Creswell & Clark 2011). Alvi (2016:33) states that Snowball Sampling is also called Chain Sampling one element of the population is approached at a time and then is asked to refer the investigator to the other elements of the population and further refers to quota sampling as a non-probability sampling technique in which researchers look for a specific characteristic in their respondent and then take a tailored sample that is in proportion to a population of interest. Furthermore, quota sampling is seen as a type of sampling method used when population is heterogeneous i.e. every element of the population does not match all the characteristics of the predefined criteria; instead. The elements differ from one another. This latter qualitative sampling option i.e. Quota Sampling, was selected and utilised with the study for this purpose. The choice was expected to ensure that as many of different population groups relevant to the study were included in data collection.

The target population of individuals who could be potential study participants comprised staff of eThekweni Municipality (n=364). The research study was carried out over four phases, which included focus groups, semi structured interviews and a survey questionnaire. The desktop review (Phase 1) involved a review of secondary data and required no sampling strategy. Semi structured interviews and focus group discussions were methods conducted within Phase two. The second empirical phase that is Phase three was based on a quantitative survey. The sampling strategy was therefore separated out into the sampling approaches, as used in the data collection approach.

4.10.2. PHASE TWO SAMPLING PLAN (FOCUS GROUP DISCUSSIONS AND INDIVIDUAL INTERVIEWS)

Phase two of the research study was qualitative in nature. Non-Probability quota sampling was used. The researcher ensured that selection of participants included members from each of the stakeholder categories. Maximum variation sampling was utilised to ensure that all users who reported different experiences of using the document management systems were included for participation in the study. This approach ensured inclusion and representation of all the stakeholder categories of data- collective process. Table 4.1 below provides a summary of the samples that were used for the Focus group and individual interviews.

Table 4. 1 Summary Overview of Sampling Approaches Used for Phase 2 of the Study (Source: Author's Own, 2019)

Qualitative Phase of Data Collection.	Method of Sampling Utilised	Size of sample
Individual Interviews X 45	Quota sampling combined with maximum variation sample identification	N=45
Focus Group Discussions X 2 (5 and 7 Participants each)	Quota sampling	N=2

4.10.3. PHASE THREE – THE QUANTITATIVE SURVEY – SAMPLING PROCEDURES

Simple random sampling was used to identify a representative sample of the potential survey respondents from the parents and source population (N=23000). Simple random sampling as described by Ochoa (2017) as the most basic type of probability samples in which all of the elements in the population-and consequently, all of the units in the sampling frame-have the same probability of being selected for the sample. In this type

of sampling Alvi (2016) contends that each and every element contains some kind of characteristics that meets the described criteria of the target population. The basic benefits of this method were the eradication or alleviation of sampling basis and more importantly the sample was a good representative of the population. The sampling plan for this research was based on the following.

Parent /source population =23000 employees employed by eThekweni Municipality and who utilise the services of the Administration Unit. The epi-info sampling calculator (www.epi-info.com) was used to calculate the sample size and calculations were carried out using the following population parameters:- Target Population = 364 respondents comprised of Mayor (n=1); Executive Committee(EXCO) (n=10);Councillors (n=206 ;City Manager (n=1); Deputy City Mangers (n=6); Heads Of Departments (n=80) and operational staff (n=20).This is a total of 364 respondents within the target population.

A confidence level of 95% and a confidence interval of 5%, were used and based on these, the predicted sample size was 168 respondents. To allow for attrition, a further 10% was added to the sample size i.e. 17 respondents, culminating in a total of 186 respondents being recruited to take part in the survey.

4.11. DATA COLLECTION STRATEGIES

Data collection and analysis is critical in the research process. Carefully thought out and implemented methods are essential to the efficacy of any research.

Data collection, according to Dudovskiy (2018), is the process of gathering the desirable information from all the relevant sources to find answers to the research problem, test the hypothesis and evaluate the outcome.

There are two types of data:

- Primary Data
- Secondary Data

Primary Data is data collected first-hand by the researcher through the researcher's direct efforts and experience. This gathering of data has a core function of addressing his research problem. Surbhi (2018) cautions however, that the collection of this raw data can be quite expensive.

A range of methods like surveys, interviews, focus groups and so forth, can be used to collect primary data -such data as confirmed by Reddy (2018) can be considered highly reliable.

Secondary Data refers to the data that the researcher collects and compiles from another source and accessible to the public. There may also be unreliability with respect to the accuracy of the data but could be inexpensive to collect (Reddy 2018).

There are two types of methods for collecting data. They are:

1. Qualitative Data Collection
2. Quantitative Data Collection

Qualitative research methods typically include interviews and observations, but may also include case studies, surveys and historical and document analysis. Qualitative data can be best conveyed in the form of words (Anastasia 2017).

4.11.1. PHASE TWO: QUALITATIVE DATA COLLECTION VIA INDIVIDUAL INTERVIEWS AND FOCUS GROUP DISCUSSIONS.

Quantitative research Methods: can be quantified and expressed as numbers is quantitative data (Anastasia 2017).

For the purposes of the current study, both Data collection methods were utilised: firstly, during the qualitative stage, semi structured interviews and focus groups were used. Each aspect of data collection had a number of quality and rigour assurance measures that the researcher employed and most critical to these was the issue of ensuring Trustworthiness of all the aspects of the study.

Table 4. 2 Terminology and Criteria Used to evaluate the Credibility of Research Findings (Source: Noble and Smith 2014)

Quantitative research terminology & application to qualitative research	Alternative terminology associated with credibility of qualitative research
<p><i>Validity</i></p> <p>The precision in which the findings accurately reflect data.</p>	<p><i>Truth value</i></p> <p>Recognise that multiple realities exist; the researchers' outline personal experiences and viewpoints may have resulted in methodological bias; clearly and accurately presents participants perspectives.</p>
<p><i>Reliability</i></p> <p>The consistency of the analytical procedures including accounting for personal and research methods biases that may have influenced the findings.</p>	<p><i>Consistency</i></p> <p>Relates to trustworthiness by which the methods have been undertaken and is dependent on the researcher maintaining a 'decision-trail' i.e. the researcher's decisions are clear and transparent. Ultimately an independent researcher should be able to arrive at similar or comparable findings.</p> <p><i>Neutrality or Confirmability</i></p> <p>Achieved when truth value, consistency and applicability have been addressed. Centres on acknowledging the complexity of prolonged engagement with participants and that the methods undertaken, and findings are intrinsically linked to the researcher's philosophical position, experiences, and perspectives. These should be accounted for and differentiated from participants accounts.</p>

Quantitative research terminology & application to qualitative research	Alternative terminology associated with credibility of qualitative research
<p><i>Generalisability</i></p> <p>The transferability of the findings to other settings and applicability in other contexts.</p>	<p><i>Applicability</i></p> <p>Consideration is given to whether findings can be applied to other contexts, settings or groups.</p>

It is of paramount importance that the findings in qualitative research is subjected to evaluation and scrutiny. The researchers aim in utilizing the above was to utilize the framework as an informed guide to enhance the rigour and integrity of the research and its findings. Table 4.2 sheds light on ensuring the credibility of the findings in relation to qualitative research. Unlike quantitative studies, the methods employed are statistical in nature that establishes validity and reliability of research findings. Qualitative researchers on the other hand strive to develop and incorporate methodological strategies to ensure the “trustworthiness” of their research findings. Put simply, the table above expounds on the differences in terminology criteria used to evaluate qualitative research.

Noble and Smith (2015) further posits strategies that qualitative research can adopt to critically evaluate the credibility of study findings. Similarly, these provides a basis for strategies that qualitative researchers can adopt to ensure the credibility of the study findings.

Within the current study, several of the strategies were utilised and included.

1. Accounting for the researcher’s personal biases by declaring these at the beginning of the study and requesting the involvement of another expert to support the analysis of data aspects.
2. The researcher took care to acknowledge biases that may have occurred in sampling and also supported this with providing ongoing critical reflection on the methods being used to ensure sufficient depth and relevance of data collection and analysis.

3. Meticulous record keeping was facilitated to ensure a clear demonstration decision-making trail and ensuring interpretations of data were consistent and transparent.
4. Establishing a comparison case/ seeking out similarities and differences across accounts to ensure different perspectives are represented.
5. Including rich and thick verbatim descriptions of participants' accounts to support findings by encouraging participation among participants.
6. Respondent validation: includes inviting participants to comment on the interview transcript and whether the final themes and concepts created adequately reflect the phenomena being investigated.
7. Data triangulation was achieved by using different methods and perspectives help produce a more comprehensive set of findings.

4.12 FACILITATION OF THE INTERVIEWS

Interviews are a staple method adopted in qualitative research. Many authors argue that face to face interviews are the benchmark (Oltmann 2016). They further posit that in the qualitative paradigm interviews are often seen as one of the best ways to enter into the other person's perspective and develop thick description of a given social world analysed for cultural patterns and themes (Oltmann 2016).

Within the current study, semi structured interviews were a noteworthy mode of data collection. Bryman (2016) defines semi structured interviews as a term that covers a wide range of types. It typically refers to a context in which the interviewer has a series of questions that are in the general form of an interview guide but is able to vary the sequence of questions. He further states that the questions are frequently somewhat more general in their frame of reference form that typically found in a structured interview schedule. Also, the interviewer usually has some latitude to ask further questions in response to what are seen as significant replies. In qualitative interviews, words are the main currency of the interviewing and subject to analytical interpretation; audio recording of interview talk has become standard (Edwards & Holland 2013). DeCarlo (2018) forwards that interviews are the ideal vehicle to collect and gather data. The critical aspect of interviews he emphasizes however, is the importance of understanding the "how's",

which requires back and forth dialogue with the respondents. An important point to clarify is that the researcher elicited permission from the interviewees to record the interview. All agreed and consented to the recording. Anon. (2016) stresses the importance of transcription. The immediate transcriptions of the interviews once complete, ensured accuracy and assisted to avoid misinterpretation of the data. It must be noted that the researcher chose to transcribe all the recordings himself. Although tedious and time consuming it familiarised the differences, similarities and encouraged closeness to the data while becoming aware of the emerging themes. This exercise also helped the researcher reflect on the process of the interview, the questions, answers, topic area and so forth. This proved invaluable to the research study.

4.14 THE INTERVIEW PROCEDURE

The researcher ensured the responses were recorded digitally during the interview. Spare recorder and back up batteries were also on hand. All interviews took place in a comfortable, air-conditioned room with very little distraction. The researcher ensured that a copy of the interview schedule and necessary contact details were provided to each interviewee, bottled water and biscuits were available to all interviewed. The researcher also facilitated transition between the major topics and endeavoured to maintain control of the interview during all stages. The researcher was also cognisant of the appearance, tone and demeanour nuances of the interviewee when replying to questions. Occasionally the researcher also tested the recorder and immediately after the interview tested the recorder to verify that the whole interview was recorded. The researcher showed sensitivity, was friendly, non-judgemental, empathetic, open and honest, flexible and appreciative towards each interviewee. The researcher ultimately strived to create a relaxed, comfortable conversation.

4.15 FACILITATION OF FOCUS GROUPS

Luke and Goodrich (2019) describes rather succinctly that focus groups are a planned established mechanism for data collection across qualitative, quantitative and mixed

methods methodologies. They expand by stating that focus groups are designed to elicit respondents' perceptions on a topic under study or interest in a permissive, non-threatening environment. Liamputtong (2015) further iterates that it is a group of people gathered together to discuss a focused issue of concern. Baral; Uprety and Lamichhane (2016) state that focus group discussions involve a gathering of people from similar backgrounds or experiences together to discuss a specific topic of interest.

Bryman (2016: 503) states that in many ways its uses are tied up with the uses of qualitative research in general, but summarises over and above these, the following factors are important:

- People, who were known to have had a certain experience, could be interviewed in a relatively unstructured way about that experience.
- The technique also allowed the researcher to develop an understanding about why people feel the way they do.
- Focus groups also bring to the fore issues relating to the topic that they deem to be important and significant.
- Focus groups allows for arguments and challenges of each other's view (+ use of participant).
- Focus groups allow the process to be reflected through which meaning is constructed in everyday life. To this extent it can be regarded as more naturalistic.

Smithson (2012:3) sums up the focus group method quite succinctly by stating that one of the perceived strengths of focus groups is the possibility for research participants to develop ideas collectively bringing forward their own priorities and perspectives.

4.15.1 Recording and Transcription

Some discussion is required around a number of practical aspects when conducting focus groups. According to Logie (2014:4), focus groups are typically recorded digitally then transcribed verbatim. This can then be entered into qualitative analysis software to facilitate and aid data analysis. Bryman (2016) offers the following reasons however to explain this preference:

- The simple difficulty of writing down correctively and accurately what the participants say, but also who says it.
- It allows the researcher to ascertain the ranges of opinions within the group.
- One of the major rationales of conducting focus group sessions is to study the processes whereby meaning is collectively constructed. Taking notes will obviously create challenges.
- All qualitative researchers focus on not only what is being said but critically how they say it.

Dilshad and Latif (2013:196), however, concedes that although the use of a digital recording device presents an advantage of accessing the full record of possibly rich source of data, the limitation is that it is always time consuming. Notwithstanding this, notetaking is encouraged however even when discussions are recorded.

4.15.2 DETERMINING THE NUMBER OF FOCUS GROUPS THAT WERE NEEDED.

In preparation for the implementation of focus group discussions, two important issues deserved attention; namely the number of focus groups and how many people needed be in each focus group. Dilshad and Latif (2013) state that the question of how many focus groups are needed to ensure that proper coverage is vitally significant. In most situations, the saturation theory is applied. Bryman (2016) explains that once your major analytic categories have been saturated, there seems little point in continuing, and so it would be appropriate to bring data collection to a halt. Put in another way, saturation theory is when no new additional information is generated.

Liamputtong (2015:18) posits that another rule of thumb is that a researcher simply should conduct as many sessions as is required to provide a reliable answer to the research question. Bryman (2016) argues however that the more groups will increase the complexity of your analysis. He further forwards that many focus group researches like to use stratifying criteria to ensure that groups with a wide use of features will be included. With this pre-existing awareness, the current study utilised two focus group discussions comprising 5 and 7 discussants respectively, as per the initial plan at the point of

developing the study plan. Even with this plan, the researcher was sufficiently satisfied that there was no need for more than two focus groups as data saturation had been reached. With each of the focus groups, five and seven participants were selected for inclusion.

4.16 LEVEL OF MODERATOR INVOLVEMENT

Smithson (2012) indicates that, one key specific issue that the moderator is expected to deal with includes dealing with disagreement and arguments in the groups, also noticing when participants are uncomfortable, addressing them in an appropriate manner while ensuring that the outcome is achieved or desired deliverable. Bryman (2016: 508) refers that in qualitative research the aim is to get at the perspectives of those being studied. Consequently, the approach should not be intrusive and structured. Dilshad and Latif (2013) further purports that, in order to facilitate the interaction between these group members, he constantly provides probes and pauses while involving people in discussion without expressing any value on the answers received.

Smithson (2012) clarifies that in practice a moderator can never be a neutral bystander and should instead aim for reflexivity and awareness of the way their characteristics and behaviour may be influencing the group. He goes on to state that it is possible for the moderator to make explicit use of their own experience as a way of encouraging the discussion. Within the current study, the facilitator adopted a purist facilitator role and ensured that all those who were in the group were given fair opportunity to offer their thoughts and views. Also, as guided by Bryman (2016: 509), the moderator's main role was to allow the discussion to flow freely and also only intervening to bring out especially salient issues, particularly when group participants did not do so.

Eriksson and Kovalainen (2011) encapsulates the above by expressing that the task and level of the moderator involvement is both a demanding and challenging one, where the main tasks include the explanation of the topic, the purpose and process of the discussion, helping people feel relaxed, listening to them and facilitating interaction in the group. Within the current study, the facilitator/moderator took on these roles.

4.17 ADVANTAGES AND DISADVANTAGES THAT EMERGED FROM USING FOCUS GROUP DISCUSSIONS.

Focus groups have considerable strengths and weaknesses. A discussion will expound these advantages and limitations.

Key advantages of focus groups discussions as advanced by Baral et al. (2016) are listed here under:

- Focus group discussions elicit free and open discussion, generating new ideas that are useful for decision making. A focus group discussion is dynamic. The involvement of the moderator can positively facilitate the discussion during the group discussion. This yields better results in terms of quality information derived.
- Focus group discussions offer expressions other than those in verbal form such as gestures and simulated activities which provide the researcher with useful insights.

4.17.1 LIMITATIONS OF USING FOCUS GROUPS

According to Bryman (2016: 516), there are limitations to focus group discussions and each of these was taken account of within the current study for example,

- The researcher acknowledged that he had less control over proceedings than with individual interviews.
- Focus groups were difficult to organise and especially with regard to ensuring the collective availability of all the prospective discussants.
- Transcribing recordings are time consuming than individual interviews.
- In focus group discussions there are problems that are not encountered in individual interviews, most notably the tendency for more than one participant to speak at the same time. The latter issue was dealt with by the researcher within the current study.

4.18 QUALITATIVE PHENOMENOLOGICAL DATA ANALYSIS

A rather general definition of qualitative data analysis is advanced by Flick (2013) as being 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 is represented and what is represented in it. Flick (2013) further states that the significant aims of Qualitative Data Analysis are when:

- A phenomenon needs description in some or great detail.
- Identification of the conditions on which such differences are based on (comparing several cases).
- A researcher wants to develop a theory of the phenomena under research from the analysis of the empirical information.

Dilshad and Latif (2013) emphasise that the transcription of tapes/digital recorders is essential for data analysis. Further to this the process of data analysis must begin immediately the group session ends. Eriksson and Kovalainen (2011) concur by advancing that in whatever format empirical data is collected, it is most useful to familiarise yourself with them and start making preliminary analyses as soon as possible after each discussion. As such, the current study was designed in such a way that the researcher would transcribe and analyse the data as soon as was practicable after the completion of each of the focus group discussions. This also assisted the researcher by ensuring that immersion in the data occurred while the memory of salient details from the discussions were still fresh in researcher's mind.

As an aide to the data analysis process, Colliazzi's (1967) data analysis framework was used as guide to how the researcher dealt with the collated qualitative data. This method is a primary example of thematic data analysis approach used in phenomenology. The use of Colliazzi's method of data analysis enabled new knowledge to be revealed and provided experiential insights. This method was used as a clear and logical approach through which the fundamental structure of an experience can be explored. Colliazzi's approach of data analysis is robust and rigorous and thus a qualitative method that assists

in ensuring the credibility and reliability of its findings (Wirihana *et al.*, 2018). Adopting this method allowed for the research to reveal emergent themes and interwoven relationships. The framework is based on a six-step process as depicted below.

- Step One – The researcher started by reading the entire interview to get a sense of the whole.
- Step Two – the whole transcription was disseminated into several parts to determine the meaning expressed.
- Step Three – Relevant themes were clustered together according to meanings.
- Step Four – Descriptions were given back to the participants for verification.
- Step Five – In order to understand experiences, the researcher had to move from individual phenomenological structure to the general description of situated structures. It is through this process that several themes were identified from each participant and then clustered into a number of general themes that appeared to be common to all the participants' description.
- Step Six – The final step in data analysis involved an interpretation or meaning of data and it was at this stage that clustered themes and meanings were used to develop the textural descriptions of the experiences. From the textural and structural descriptions an integration of the meanings and essences of the phenomena were constructed (Mafenya 2014).

4.19 OVERVIEW OF METHODOLOGICAL ISSUES RELATED TO THE QUANTITATIVE PHASE OF THE STUDY

Madrigal and McClain (2012) identify quantitative studies as providing data that can be expressed in numbers, and because the data is in numeric form, the researcher can apply statistical tests in making statements about the data. Building onto this, Creswell (2014:76) purports that in a mixed methods study, researchers collect analyse, and integrate both qualitative and quantitative data using diverse mixed methods designs.

To this end and in addition to the semi structured interviews and focus group discussions, a quantitative phase, based on, surveys was conducted. Ponto (2015) confirms that the selection of a research approach depends on a number of factors, including the purpose of the research, the type of research questions to be answered and the availability of resources. In the current study, the topic area was deemed to be fitting of both qualitative and quantitative methods, the latter of which was the self-administered survey questionnaire.

4.20 THE USE OF A SURVEY AS A DATA COLLECTION METHOD

According to Blackstone (2014), a survey is ubiquitous, very much part of our everyday lives. Survey research is a quantitative method whereby a researcher poses some set of predetermined questions to an entire group, or sample of individuals. The survey research served as an exploration or opportunity to obtain data on the emergent themes and variables of interest. In the current study, the implementation approach was by way of self-complete questionnaires. Questionnaires have many uses, most notably to discover what the masses are thinking. These include market research, political polling, customer service feedback, evaluations, opinion polls and social research (O’Leary 2014). In the current research, the empirical survey served as an opportunity to obtain data on the current Document Management System in the eThekweni Municipality whilst providing opportunities for the researcher to utilise the information gathered as part of a process for validating the findings initially identified in the qualitative phase (see Appendix 3 for sample of questionnaire).

4.21 QUESTIONNAIRE AS A MEASUREMENT INSTRUMENT WITHIN THE SURVEY.

A questionnaire is an instrument for collecting data (Debois 2016) and almost always involves asking a given subject to respond to a set of oral or written questions. Bryman (2016: 232) contributes by stating that questionnaires that are completed by respondents themselves are one of the main instruments for gathering data using a social survey design.

4.21.1 THE DESIGN OF THE QUESTIONNAIRE

The construction or designing of the questionnaire demands careful consideration and planning. Hyman and Sierra (2016) simply state that an instrument is only as good as the question it asks. He adds that the critical aspect is to ensure a well thought out questionnaire enabling the best possible responses. McLeod (2018) contributes by stating that a well-prepared questionnaire provides a relatively cheap, quick and efficient way of gathering large amounts of information from a relatively large sample of people. The presentation must be clear and concise. Bryman (2016: 237) recommends the use of darker or larger prints, different styles, fonts print size can enhance the appearance but cautions that they must be used in a consistent manner.

There is also the advantage of coding where using vertical alignments contains by adding that clear instructions must be given about how to respond (Bryman 2016: 239). It is a common error for instructions to be omitted and for respondents either to be unsure about how to reply or make inappropriate selection. Also keep questions and answers together; one should never split questions so that it appears on two separate pages.

Dyson and Norrie (2012) contribute by articulating that questions commonly start with a selection of demographic data. This selection gives information about who is completing the questions. Items can include age, gender, ethnicity, qualifications, years of employment and so forth.

In a quantitative survey most items are closed question or shortened. Surveys will either consist of Closed or Open-ended questions. Open ended questions allow for in depth responses and participants to provide more details. Closed ended questions simply allow for short “Yes “or “No “responses (Hyman and Sierra, 2016). One of the main strengths of the Open-Ended questions is that it allows for rich qualitative data to be obtained. This allows increased details and elaboration on why the respondent holds a particular attitude McLeod (2018). Further the disadvantage is the lengthy time consumption to collect the data. Hyman and Sierra (2016) furnishes that the overarching advantage of Closed ended questions are that it is easy, fast and data is quickly coded, entered and analysed. The disadvantage he further states is that one cannot elicit in depth detailed responses. It is also poor at providing new insights. An individually used format to gauge a respondent's

degree of agreement with a series of questions or statements is a Likert Scale. This scale is designed to measure the intensity with which the respondents feel about an issue (Bryman 2016: 712).

4.21.2 AN ASSESSMENT OF BENEFITS AND LIMITATIONS ASSOCIATED WITH THE SURVEY

METHODOLOGY.

In using the survey method, the researcher was cognisant of the fact that, as with all methods of data collection, this approach had strengths and limitations that needed to be taken account of. Bryman (2016: 233) summarises the strengths of the survey approach as,

- Cost effective and cheaper to distribute.
- They are quicker to administer.
- Absence of interviewer effects.
- No interviewer variability.
- Convenience for respondents.
- Generalisability.
- Very versatile

By contrast, they were some noteworthy limitations to this method. Blackstone (2014) notes the weaknesses of survey research to include inefficiency and issues with validity. Bryman (2016) adds to this by highlighting that with surveys, you cannot probe, prompt and cannot ask many questions that are not salient to respondent. In addition, the researcher does not know who answers, and cannot collect additional data. Similarly, there exists a greater risk of missing data (Bryman 2016: 234). Even so, the survey presented a unique opportunity to obtain data on the appraisal of local government Document Management systems of selected clusters in the eThekweni Municipality. It is often not feasible to collect data from an entire population of interest; therefore, a subset of the population or sample was used as articulated within the sampling strategy described earlier within the chapter.

4.22 DATA ANALYSIS

The data analysis procedures for the quantitative data analysis involved the analysis of data using both descriptive and inferential statistics. The descriptive statistics referred to obtaining demographic information of the participants as a way of understanding, much more clearly, who the municipality employees were. Further to that, the inferential statistical analysis involved identifying a number of measures on association that included the T-test and the Cronbach coefficient.

4.22.1 AN OVERVIEW OF THE T –TEST.

According to Polit & Hugler (2009), the T test is used as a hypothesis-testing tool, and it allows for the testing of an assumption applicable to a population. A t-test looks at the t-statistic, the T-distribution values and the degrees of freedom to determine the probability of difference between two sets of data. Within the current study, the T-test was used to assess whether there was a correlation between the uptake of the new document management system and a number of demographic and/or population characteristics such as the age of the employee or their role within the municipality.

4.22.2 CRONBACH ALPHA CO-EFFICIENT

In order to evaluate the reliability of data supplied in a research study, high quality tests must be undertaken. To this end, Lee Cronbach developed alpha in 1951. The primary objective was to provide a measure of the internal consistency, that is, how closely related a set of items are as a group, and further states that Cronbach Alpha is considered to be a measure of scale reliability. Rachel (2018) postulates that theoretically, Cronbach's Alpha results is expressed as a number between 0 and 1. The closer Cronbach's Alpha co-efficient is to 1.0, the greater the internal consistency. Tavakol and Dennick (2011) emphasise that alpha is an important concept in the evaluation of assessments and questionnaires. It is mandatory that researchers estimate this quantity to add validity and accuracy to the interpretation of the data.

4.23. TRUSTWORTHINESS OF THE QUALITATIVE PHASES OF THE STUDY

The fundamental exercise of findings and research is to be able to use them in practise; therefore, one must outline the rigour or the integrity in which any study is conducted. The subsequent paragraphs will attempt to address these to ensure credibility and soundness of the findings in relation to qualitative research (Noble & Smith, 2015).

Cypress (2017) contends that even in the 21st. century, issues are still raised by the persistent concern with achieving rigour in qualitative research. Continuous debate still rage with regards to the analogous terms of reliability and validity in naturalistic inquiries as opposed to quantitative investigations. Creswell (2014) advocates that qualitative validity means the researcher checks for the accuracy of the findings by applying certain procedures while qualitative reliability is indicative of the researchers approach consistent across different researchers and different projects. Creswell (2014) further articulates that validity is one of the strengths of qualitative research when it is based on determining whether the findings are accurate from the standpoint of the researcher, the participant or the readers of an account. Even so, Lincoln and Guba (1985, 1994) propose two primary criteria for assessing a qualitative study: trustworthiness and authenticity. (Bryman, 2016: 390). According to Guba and Lincoln (1994), trustworthiness in a qualitative study is determined by four indicators, credibility, transferability, dependability and confirmability (Kumar, 2011).

Bryman (2016: 390) further asserts that each of the above four qualitative criteria have an equivalent criteria and qualitative research namely:

1. Credibility, which parallels internal validity.
2. Transferability, which parallels external validity.
3. Dependability, which parallels reliability.
4. Confirmability, which parallels objectivity

A major reason for Guba and Lincolns (1994) discomfort with the simple application of reliability and validity standards to qualitative research is, in their view related to the fact they view the social world as having no absolute truths and one of a several differing

accounts can all be reflective of reality (Bryman 2016: 390). To avoid this shortcoming, Lincoln and Guba (1994) offer alternative criteria for demonstrating rigour within qualitative research, which are “truth value, consistency and reliability and applicability” (Noble & Smith 2015).

The list below outlines the difference in terminology and criteria used to evaluate qualitative research.

4.23 RESEARCH ETHICS/ ETHICAL CONSIDERATIONS

Ethics plays a pivotal and critical role in scientific study. Research ethics involve requirements on daily work, the protection of dignity of subjects and the publication of the information in the research (Fouka and Mantzorou, 2011).

The study adhered to a code of principles and to rules of conduct. These were all the responsibility of the researcher whose intentions and plans are presented hereunder as part of the ethical considerations.

As indicated by Scott (2013) understanding principles guiding ethically sound research activity is a critical component. The key concepts are:

- Respect for persons in the context of research, this alludes to ensuring that participants are adequately informed about the research project. This information should enable respondents to give informed consent to participate. Respect for persons also demands that the participants are assured of confidentiality or anonymity and that their privacy is protected.
- Beneficence and non-maleficence: literally mean do no harm.
- Justice: All research participants must be treated fairly.
- Ethical issues permeate the entire research process, from question identification and selection to dissemination of findings.

The researcher undertook the following steps to ensure compliance with specified ethical principles and maintain professional integrity. Permission for completion of the study involved three processes.

- Ethical clearance from the Durban University of Technology Ethics and Higher Degrees Committee was obtained.
- Site permissions was sought and obtained from the eThekweni Municipality in order to gain access to employees working across the different cluster of the Municipality.
- Informed consent was obtained from all prospective respondents and participants. Informed consent was sought and obtained from all participants. As part of this process participants were informed about the purpose of the study, the roles that they needed to play, and the possibility of discomfort that may accrue from the investigative process. Consent forms were given to all participants and signed prior to participation. The following steps were adhered to in obtaining informed consent.
- Disclosure of information. The researcher provided all participants with clear information regarding their participation in the study. To ensure meaningful implementation, the researcher ensured that their consent was understandable, clearly specifying that voluntary nature of involvement, the confidentiality and anonymity guaranteed to participants.
- Anonymity and Confidentiality - All participants and respondents who participate in the study do so with the expressed expectation that their identities would be protected and that no personally identifying information would be availed to any party outside of the researcher. The current study will require that respondents and participants provide insider perspectives about processes that they are likely to still be using within their workplace. Therefore, any contributions that highlight weaknesses of existing provisions may be unwelcome and participants need to be reassured that their identities would be protected in the event of any resulting persecution. Anonymity and protecting the confidentiality of participants represent

the most foundational of ethical principles and therefore, should be critically included in any study plan.

Further to the above, the principle of justice was centrally adopted. To ensure adherence, the researcher treated all participants equally and ensured that justice was exercised by selecting participants based on research, criteria and requirements. The researcher also ensured that the researcher- participant relationship did not create room for the participants to be exploited, coerced or manipulated.

4.24 SIGNIFICANCE OF THE STUDY

The researcher's review of data and published research shows that, to date, no "total quality management" and "acceptance-of-technology" comparative analyses of different document management system options have been empirically conducted within the South African public service context. Gupta (2015) and McCormack (2011) share the idea that the exclusive focus on South Africa represents an informed acknowledgement of the fact that the context in South Africa is made up of a unique and complex set of local conditions that differ from other countries. Even so, the study will investigate global comparatives to allow for the identification of best practices. Clarifying the total quality management; business excellence and technology acceptance constructs of different document management systems will, amongst other things, could guide the development of evidence-based methods and options for document management. Guided by this, the current study will intensively focus on conducting a TQM and TAM analysis of different document management systems both within South Africa and in other countries.

4.25 LIMITATIONS OF THE STUDY

The study was exclusively based within eThekweni Municipality and its primary findings will have limited generalisability outside of similar municipality entities within similar settings in South Africa. On initial review, this may seem like a likely limitation of the study, but it is important to note that focus on one area allowed for a well-grounded understanding the phenomena even if from one setting. To offset the limitation arising

from this, the current study intentionally utilised a mixed methods approach. The combined use of quantitative and qualitative methods within the study will maximise both the potential validity and reliability of the findings. The study has the potential to be replicated in other settings and could serve as a blue-print model for others in the field.

4.26 SUMMARY

This chapter encapsulates the research paradigm, research methodologies, strategies, and design adopted in the study. The justification for the current study's epistemological platform that best articulated the study's focus is Pragmatism was expounded. Methodological considerations were critical focal aspects in developing the study's research design. To this end it was important early on the chapter to revisit the primary research problem, the study aims and objectives. The study adopted a sequential mixed methods design. This presented the researcher with a holistic and clear blueprint for the study.

The eThekwini Municipality is a complex organization and as such, the study relied on a combination of data collection methods. A desktop review, semi structured exploratory individual interviews, focus groups and a quantitative online survey was undertaken. This facilitated the researcher to explore the experiential insights of the participants into the range of factors that influenced technology acceptance of different document management systems and their personal thoughts and insights on the range of impacts on "total quality" that they experienced and observed.

A rigorous exploration of the Ethical considerations was undertaken and explained. Also included in this chapter is the significance of the study, together with the limitations experienced by the researcher.

The next chapter presents the Data, analysis and interpretation.

CHAPTER FIVE

DATA PRESENTATION, DATA ANALYSIS AND INTERPRETATION

5.1 INTRODUCTION

Chapter Four focused on discussing methodological issues including the study's research methodology and data collection process. Within the current chapter, collected data is presented, analysed and interpreted with respect to the primary research questions of the current study. Within the pragmatist paradigm, both qualitative and quantitative data are collated, as was done within the current study. By virtue of involving mixed methodologies, a combination of qualitative and quantitative analysis approaches is referred to within the chapter. The presentation and analysis of emergent data addresses data from the desktop review; the semi-structured interviews; two focus group discussions and the online survey. For this study, data collection and analysis occurred sequentially.

In this chapter, emergent data is presented, analysed and interpreted. The presentation of findings will be compromised of five distinct reporting aspects. Initially, an overview of the demography of study participants and respondents is offered, and this ensures that the findings of the study are contextualised to the specific populations that were studied. Within this, care will be taken to ensure that the pragmatist epistemological basis of the study is not overlooked as it emphasises the need for the research process to be about using the most functionally advantageous methods to better understand the topic of interest.

Second to the discussion of the participants' demographic characteristics, the chapter presents an overview of findings from the desktop review, and then the semi-structured interviews, focus group discussions and the finally the online survey. Each of these aspects are presented to support the process of answering the key study questions. To ensure a meaningful presentation and to ensure greater clarity for the reader, the findings from each of the data collection phases are separated out with respect to the specific research questions that were articulated at the beginning of the study and as noted below.

- What are the range of alternative document management systems (nationally and internationally) that are in use within the municipality's administrative unit?
- What are the key aspects of total quality performance of each of the identified document management systems within eThekweni municipality?
- What are the factors that influence technology acceptance as applied to each of the identified document management processes within eThekweni municipality?
- What are the strategic priorities as they relate to the identification and utilisation of specific document management options?
- What are the strategic priorities that influence technology adoption as it relates to, choice of document management processes within the municipality?

As indicated above, the current study is focussed on developing in-depth insights and as such, summations and interpretations that are reached by the researcher are substantiated by verbatim quotations from the participants. The online survey results allow for a more probability-based analysis of participant viewpoints.

5.2 OVERVIEW OF CONTEXT FOR DATA COLLECTION AND MANAGEMENT

During data collection, the researcher initially carried out a desktop review followed by individual and group interviews of senior and middle-management municipality employees working within eThekweni municipality. The researcher interviewed individuals who had been involved in some way with document management processes within the municipality with the primary aim of conducting a comparative analysis of the acceptance of document management systems and this involved the Mayor, Councillors; Municipality Exco and all other categories of strategic managers (n=45). The Individual Interviews included a total of 45 participants.

5.3 SAMPLE CHARACTERISTICS

Within the current enquiry, maximum variation purposive sampling approaches were used to choose participants who had relevant knowledge and insights to help answer the study's research questions (Sim *et al.* 2018). A total of municipality managers (n=45)

working in different capacities that included the Mayor (n=1); Executive Committee (Exco)(n=3); Councillors (n=20); City Manager and deputy city managers (n=4); Heads of departments (n=7) and Deputy Heads of Departments (n=10). The proportions were determined by the researcher in line with the guidance within quota sampling(Singh and Masuku, 2014). For the individual interviews, a semi structured interview schedule was used and within it, participants' socio-demographic data such as position within the municipality, number of years within the municipality, number of years in current position, age, gender, ethnicity, religion, educational level and years of service.

5.4 AGE

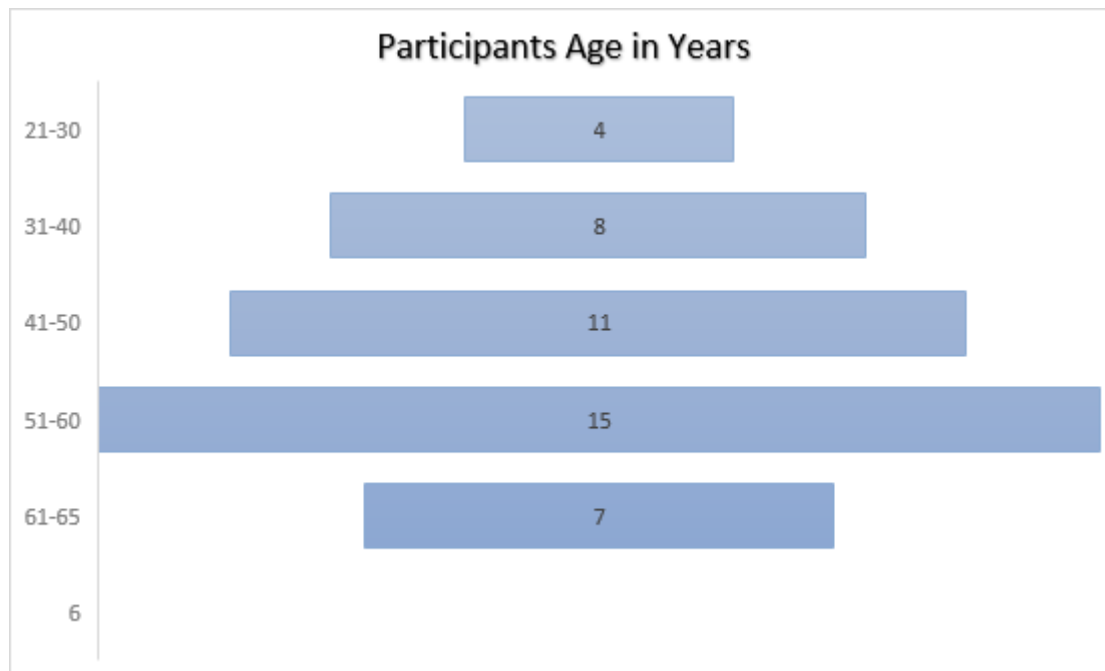


Figure 5. 1 Age Participants by Distribution (Source: Author's Own, 2019)

As indicated in Figure 5.1 above, the highest distribution of participants from the group of council management were aged between 51-60 years old (33%, n=15) while those aged between 21-30 represented 9% (n=4). Those aged between 41-50 years old represented 24%(n=11) of the whole population interviewed. Only 15% (n=7) of the participants were within four years of retirement.

5.5 GENDER

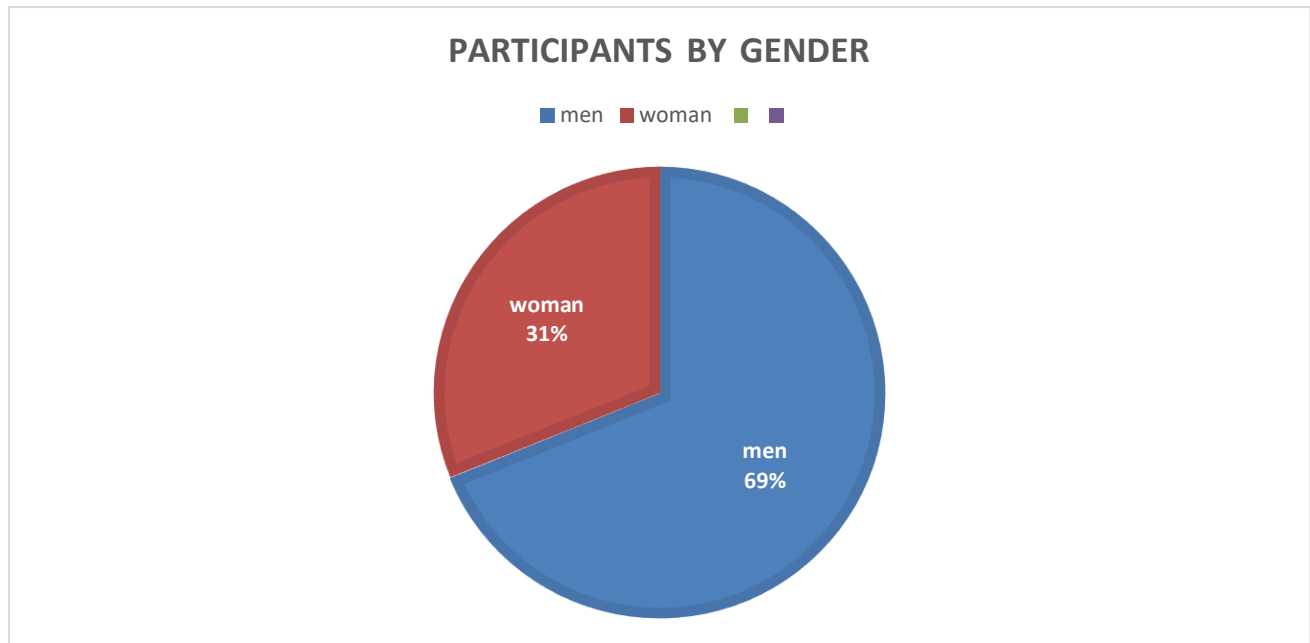


Figure 5. 2 Distribution of Participants by Gender (Source: Author's Own, 2019)

As shown by in Figure 5.2, the participant group had nearly two times as many males than females i.e. 31 males compared to 13 females (69% versus 31%). it is notable that much of the participant group were males with women representing less than a third (31%) of the study population. This distribution pattern may be suggestive of the fact that the recruitment of management personnel appeared to be biased toward males becoming senior managers over their female counterparts.

5.6 RACIAL BACKGROUND

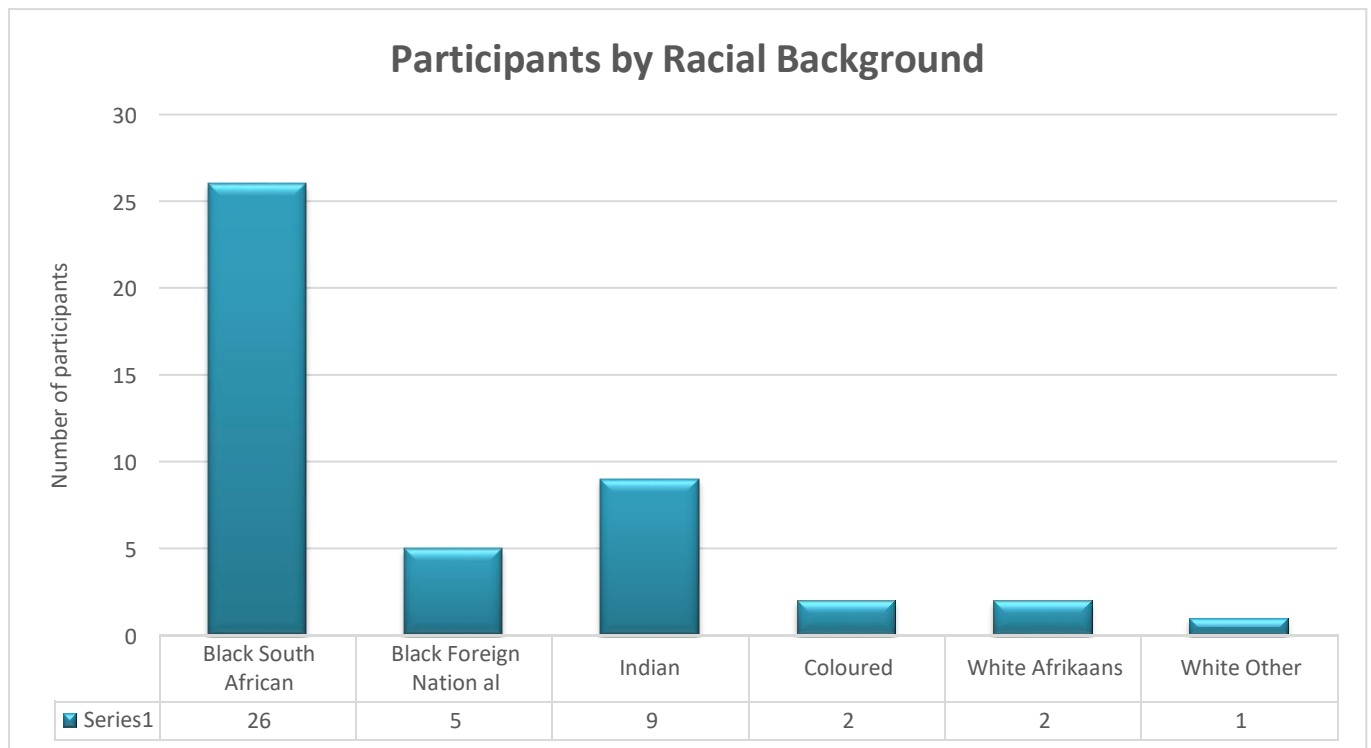


Figure 5. 3 Racial Background of Participants (Source: Author's Own, 2019)

As indicated in Figure 5.3, the majority of participants were black South Africans ($n=26$; 58%), followed by Indians ($n=9$; 20%). This second most represented group i.e. Indians, were in fact less than half of the Black South African demographic group. Black Foreign nationals from neighbouring countries in Sub-Saharan Africa represented 11% ($n=5$) of the total study population. Coloured and White Afrikaans were poorly represented with ($n=2$; 4%) apiece. it is notable that the majority of managerial employees were South African nationals and this may have been a product of the fact that many of the managerial positions within the municipality had (at some point) been subjected to the BEE (Black Economic Empowerment) provisions and within this, the employment of South African nationals above others was mandated.

5.7 TYPE OF MANAGERIAL ROLE

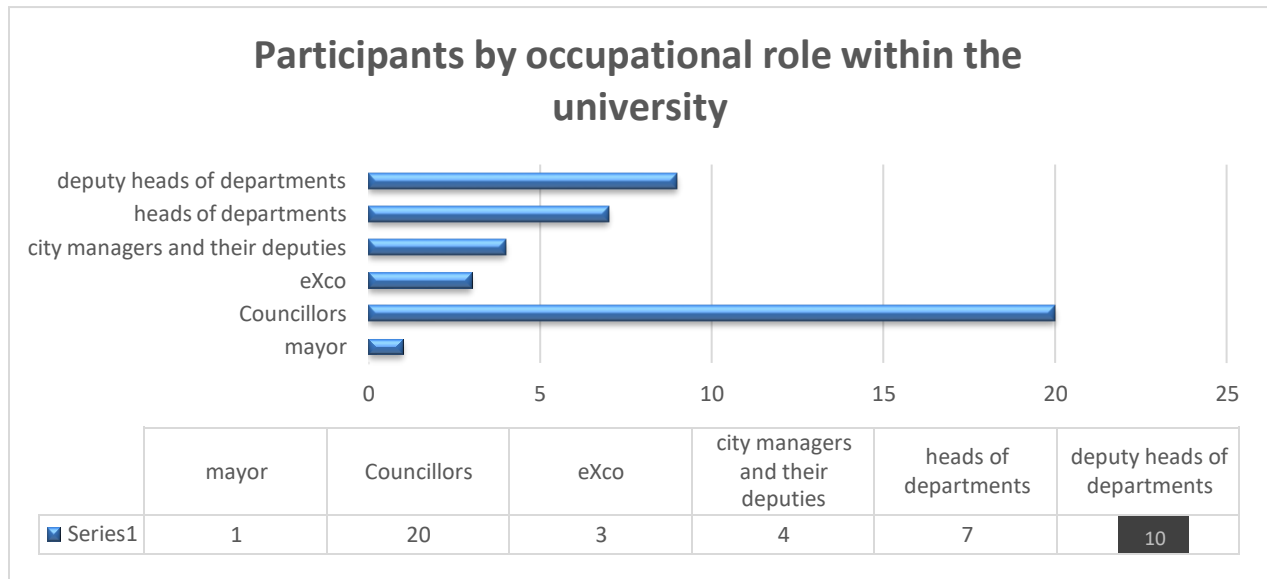


Figure 5. 4 Type of Managerial Involvement of Participants (Source: Author's Own, 2019)

As noted above in Figure 5.4, out of the 45 interviewees, nearly half of them (n=20: 44%) were councillors, followed by heads of departments and their deputies who comprised (n=16; 36%) participants. This latter group were uniquely placed in that they had direct working relationships with both the provinces' executive and non-managerial staff members with regard to the adoption and utilisation of different document management systems. the interviewees also included members of the executive committee (n=3; 6.7%) and city managers and their deputies (n=4; 8.9%).

5.8 LEVEL OF EDUCATION

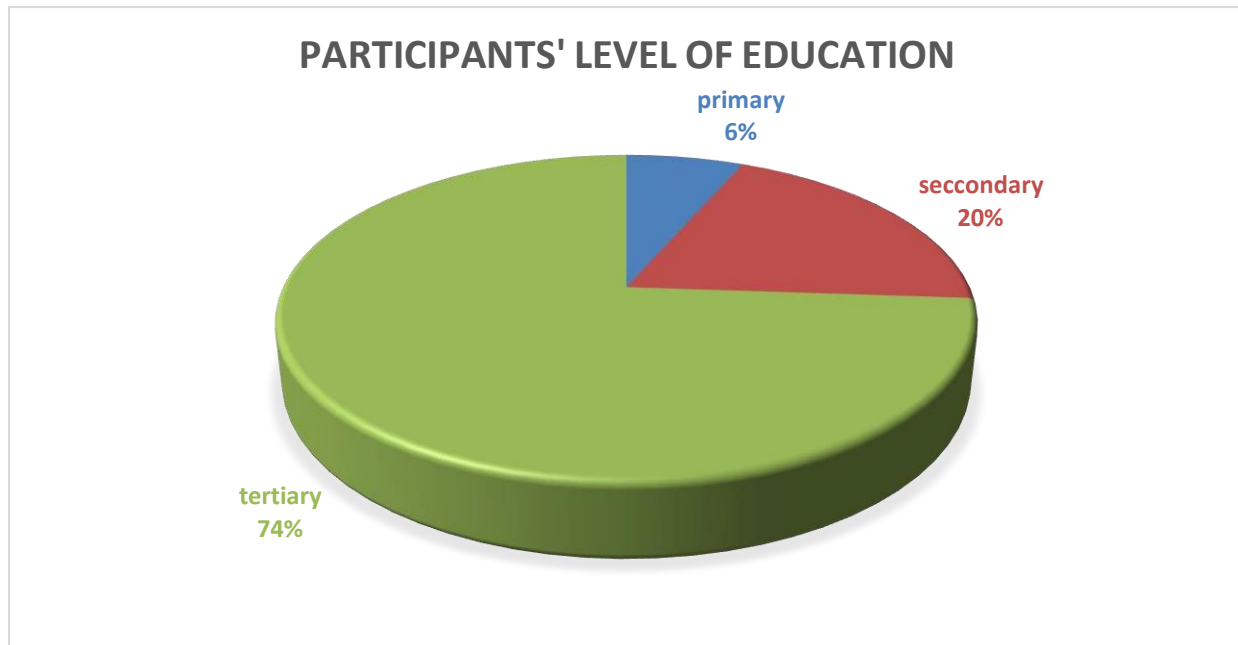


Figure 5. 5 Participants' Level of Education (Source: Author's Own, 2019)

The demographic data of participants interviewed by level of previous education was as follows: only 6% (n=3) of the interviewees were only educated to primary school level. This is especially notable given the fact the standard requirements for admission to a middle management and /or senior management position was that candidates had to have achieved at least a matric and, in most cases, a tertiary education degree. The individuals with education only up to the primary schooling level were also long-term employees who had worked for the council for almost 40 years and whose appointment pre-dated the current criteria for employment in management positions. 74% (n=34) of the 45 interviewees were prepared up to degree level as required within the job requirements for middle or senior management positions within the council.

5.9 YEARS OF SERVICE

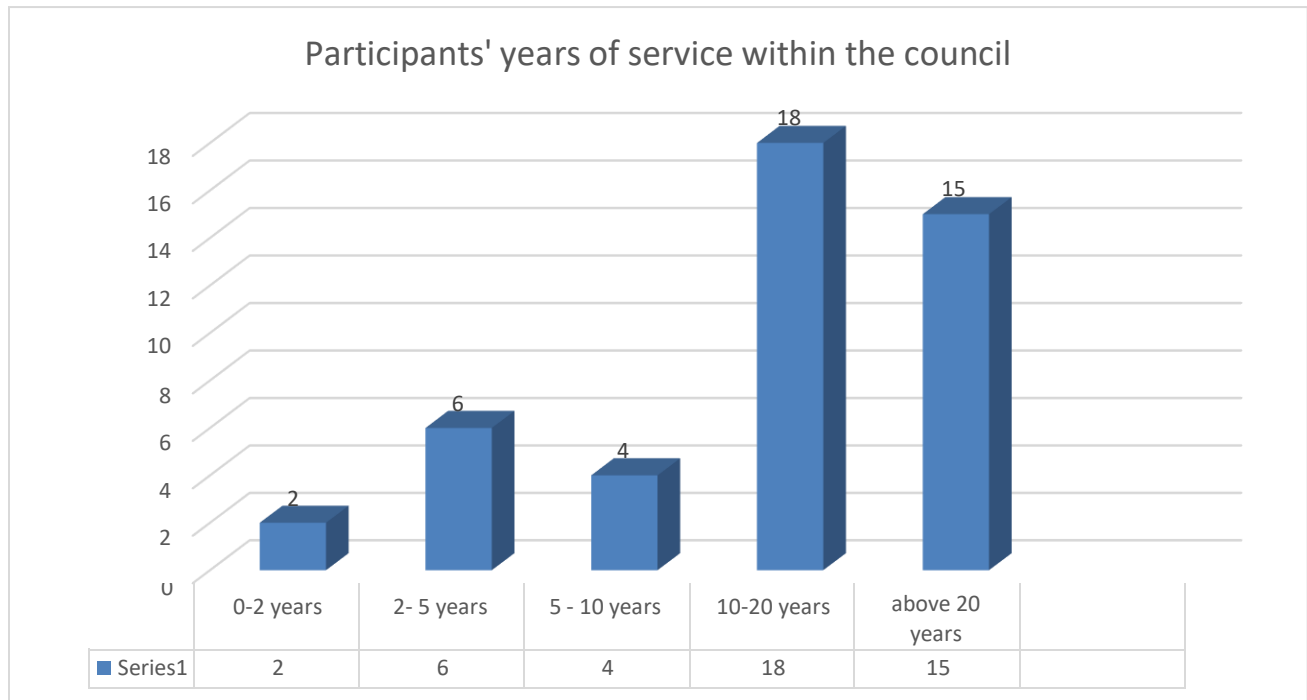


Figure 5. 6 Years of Service within the Council of Participants (Source: Author's Own, 2019)

As noted above, the collation of data about years of service within the council offered a range that included those that worked less than two years ($n=2$); those who worked between 2 and 5 years ($n=6$). Interestingly, the demographic data of participants with regard to their years of service showed that those with <5 years' experience represented 82% ($n=37$) and of those, 73% ($n=33$) had been in service for more than 10 years. This data showed a high presence of employees who had been in the system for more than a decade and in that respect, they represented a cohort that may have pre-existing working patterns that were more likely to be fairly stable and more likely to be intractable. Increase length of service may confirm the generalize level of experience within the entity and/or may signify individuals for whom the introduction of new work expectations may pose a time related challenge.

5.10 SAMPLE SELECTION FOR THE FOCUS GROUP DISCUSSIONS

A total of two focus groups with maximum variation participants were conducted. The focus groups included 5 and 7 discussants respectively, all of whom were identified from the target population of 344 participants. The focus groups had mixed membership heads and deputy heads of department (ii) City managers and deputy managers and (iii) Councillors. The above-described method ensured heterogeneity in the study group and was not intended to maximise representativeness as this was not a priority within the qualitative phase of the research (Johnson & Onwuegbuzie 2012).

5.11 OVERVIEW OF KEY FINDINGS FOR THE STUDY

The first phase of the study was primarily centred on utilising a trawl of relevant documentation and records that included local, and national data to specifically identify and describe the range of alternative document management systems (locally, nationally and internationally) that were in use within the municipality's administrative unit and other similar entities outside the province. Second to this, where specified, data was collected about the key aspects of total quality performance of each of the identified document management systems within eThekweni. Within this aspect of data collection, the primary focus was on the identification and isolation of data sources that could be deemed as appropriate to answer the above specified questions. In that regard, initial efforts were taken to closely inspect the range of policy document reports and literary sources that were kept within the main offices of the municipalities of the document management divisions. As with the identification of human participants, it was important that the retrospective review of documents also had a set of inclusion and exclusion criteria for the documents that could be reviewed and whose content could be accepted as valid. With regard to that, three specific criteria were identified and utilised and confirming the appropriateness of the documentary evidence that was reviewed. Firstly, for data to be eligible, it needed to be an officially excepted document that had been approved by the municipality as standard operating procedures, policy and/or accepted guidance. Furthermore, the municipality had a staff repository of guidance and literature that

individual managers and employees were expected to use in their day-to-day. To that end, data related to the range of document management systems was elicited from these different source documents. For ease of summarisation, the range and brief descriptions of the different document management systems in use and/or referred to in the documents are presented in Table 5.1 below.

Table 5. 1 Summary Overview of Different Management Systems (Source: Author's Own, 2019)

Type / name of document management system	Key Characteristics	Recorded Place of Utilisation
Traditional paper-based level arch filing system. Manual Document Management Systems	100% paper based. Location tracking of documents done manually	National policies, local policy documents, records of meetings
SharePoint	Web based. Large file support. Different versions (not aligned) Upgrades. Maintenance. Power Outages. Licenses Limited	Policies, SCM, Departmentalised
Drop box	Accessibility. Offline access. File sharing. Compatibility. Security challenges (sensitive files)	Councillors, Documentation, Legislation
Excel	Basic calculations. Spreadsheets. Organise and Process. Rigid and not flexible. Limits (Rows and columns)	Personal Files, Departments
Open Text	Simple user face. Capture and Track. Expensive. Architectural Complexity	Records, Repository, Administration Departments
G-Drive	Backup. Search Engines. Share pictures and Videos	HR, Storage
Cura-Software	Compliance and Risk Management. Specific. Business Continuity. Complex. Highly specialised	Risk Register, Business Continuity. Units, Departments, Cluster wide

Correspondence File Plan	Comprehensive. Records organisation. Identification.	Document Management Departments
E-Mail Management	Personal Information. Security challenges. Authenticity and Integrity of Documents. "Big Brother"	All Units, Departments, Clusters

The retrospective review of documents indicated a wide range of document management systems that included a combination of manual and e-based systems. The manual Systems related primarily to the traditional people-based filing management options and traditional mailing systems. Within the documents reviewed, this option appeared to be the most commonly utilised document management system across the municipality and in many respects, it presented the standard against which other systems were measured. In addition to the manual document management system, there were a number of electronic data management systems that were identified within the documents analysed. These electronic options included SharePoint, Drop box, Excel, Open Text, G-Drive, Cura-Software, Correspondence File Plan, and E-Mail Management. It is important to note that each of the e-options represented a mixture of systems that were locally hosted by the municipality or were hosted externally by International cloud management services such as Google.

The review of publicly published documents related to documents management systems revealed and notably presented a different picture from that seen within the municipalities own documents. In the main, little resources highlighted growing reliance on electronic document management systems particularly within developed or economically self-sustaining nations. By contrast, evidence relating to the less developed countries often depicted manual document management systems as the primary mainstay. Even so, the identification of electronic options was consistently reported within the literature, however this was largely reflected as a future rather than current priority within public services. Most notably, the literature relating to document management systems within the African context often represented electronic options as an add-on rather than an alternative nor a replacement of traditionally utilised manual document management systems.

5.12 SEMI-STRUCTURED INTERVIEWS

Following the initial document analysis, semi structured interviews were carried out with middle, senior and executive managers (n=45) within the municipality. Overall, the semi-structured interviews were focussed on developing insights into the issues related to the above specified research questions but, more specifically, participants offered insights into issues such as the range of document management systems that were in use within their areas of work; their perceptions about the factors that differentiated quality with respect to document management systems; insights into their preferred DMS, supported by the reasons for their choices; an overview of the influences that they believed to be central in the determining the quality and usability of a DMS. In addition to the above, participants were asked to give their insights into what they believe to be the most important quality considerations when making decisions about the most appropriate DMS to utilise. The latter aspect of the interviews critically engages participants on their understanding of what strategies and performance areas should be developed further in relation to document management. Key issues such as perceived ease of use, perceived usefulness, cost and System and security are all discussed with the participant as part of the report. System choice and security are all discussed with the participant as part of the exploratory aspect of the study. For ease of representation, the findings from the semi structured individual interviews are presented in the order in which issues were explored and clarified with each interviewee. As a point of note, the focus group discussions were intended as a means of eliciting group perspectives and also as a way of verifying and/or clarifying issues highlighted within the earlier data collection phases.

5.13 RANGE OF DOCUMENT MANAGEMENT SYSTEMS IN USE WITHIN PARTICIPANT'S WORK AREAS

Much like the retrospective document analysis, the semi structured interviews initially focused on ascertaining from the participants, the range of document management systems that were in use within their specific work areas. Responses from the interviewees all consistently identified manual document management systems as the

primary option in use. It is notable that all participants highlighted manual document options as the primary DMS and as a result, the other variants were highlighted as supplementary or complementary systems. For example, one of the interviewees indicated that,

“The traditional hard copy paper filing system is what we use mainly in our office because it is reliable and never fails unlike these computer-based systems which can go off-line anytime and sometimes make us lose many years of information. In South Africa I don’t think we are ready to go beyond simple hard paper.”
(Participant 12, Deputy Manager)

This identification of a manual DMS as the most commonly utilized was particularly dominant across all the responses from participants however, they were salient differences in the emphasis participants placed on certain aspects. One respondent, describe E-based DMS as a form of top-up or back-up for the primary manual DMS as illustrated by their comment,

“We use share point, drop-box and sometimes our G-Drive as a back-up to our primary manual system and also just in case our manual records become destroyed. Even with the limits of manual records being bulky, they provide the only universally accepted system for all of us to make use of especially when we send documents out to people who may live in remote rural areas.” (Participant 12, Head of Department)

The low priority given to electronic DMS was especially noteworthy given that it contradicts the current drive globally and indeed in South Africa, to progress document management such that electronic options are at the forefront (Desjardins 2009). In accordance with this, participants identified a range of e-based options that included the internal municipality G-drive, cloud-based options, e-mail management and Cura-software. The identification of e-based DMS was a noteworthy point of focus during the interviews. For example, with some of the participants, the electronical document management systems they identified were still yet to be implemented and as such

participants did not have first-hand awareness of their potential utility. This was evident in some of the responses that were provided by the participants as illustrated below.

“We have mainly been relying on manual processes, but we expect to be going into greater use of drop-box. This is especially challenging because many of the people to whom we send documents have indicated that they have little or no awareness of this option. Also, I am concerned that many people are expecting these electronic systems in addition to us providing the traditional manual documents. What this means is that many of us do not understand that these electronic options are meant to replace our current system.” (Participant 21, Head of department)

In addition to highlighting the different document management systems in use, the above statement further communicates the lack of generalised knowledge that may exist with regard to electronic document management systems.

As a progression from asking participants about the range of document management systems they had awareness of from their working environment, the interview explored participant viewpoints with regard to how they perceived quality with respect to document management systems.

5.14 INSIGHTS INTO PARTICIPANTS’ CONCEPTIONS OF QUALITY WITH RESPECT TO DOCUMENT MANAGEMENT SYSTEMS

Background literature related to the adoption of new technologies consistently identified the perceived quality of the newly introduced innovation as a central deciding factor (Davids 1985). With this background, the data collection aspect of the study specifically explored participants views of quality with respect to document management systems. In that respect, the semi structured interview schedule specifically required that middle managers, managers and executive managers provided their perspectives about what quality meant with regard to document management systems. In response to this, a

number of themes emerged from the range of responses offered. For example, some participants were of the view that, for a system to be a quality system, it needed to comply with national and local policy requirements. Most commonly cited was the view that, any document management system needed to be compliant with NARS (National Archives and Records Service Act, 1996) and relevant standards (ISO 15489). Within this viewpoint, the assertion was that, assessing the quality of any DMS needed to involve determining whether or not the DMS option was compliant with prevailing legislation and operational procedures. Participant 17 (ExCo committee) member responded to this by indicating that,

“We work according to the requirements of the law and some of these open-source document processing systems have not been vetted to confirm that they meet the laws of the land. I won’t be jumping into using cloud services if no one can tell me if this conforms to the PoPI Act and other policies like NARS. That’s my first priority before I can assess anything else about the document system.” (Participant 17, ExCo committee)

The discussions with participants about DMS characteristics that they perceived as having an influence on quality revealed a range of other considerations. For example, issues related to ease of use, ease of access, safety and being secure were specified within some of the participants resources. Anywhere, anytime access was particularly highlighted as key especially when referring to cloud-based services. Some views singled out web based non-institutional cloud services as the ultimate progressive step that was needed. One view related to this noted that,

“... we are not allowed to carry hard copy documents to our homes but often have to work away from the office. A secure cloud system can be a great advantage because it means we can work anywhere. We can decide on the level security we want the system to have. Many advanced countries are doing this.” (Participant 9, section manager)

On closer analysis, the above participant’s response draws specific attention to growing workplace requirements on the flexi-work requirements of modern-day office practices

and that current DMS requirements give priority to whether the system allows for work away from the office. Once again, the issue of system security was noted as an important consideration that would influence perceptions about the quality of the system. Systems that have no declared security status were seen as being inferior because of the confidential nature of the content that the municipality would ordinarily be dealing with. The security capabilities of the proposed DMS would have to be both high and flexible by comparison to industry competitors – a view well-articulated by one of the respondents,

“...some of these open source document management systems have been on the media for breaches in their security and we cannot be asked to seriously work with such systems. Our employers always blame the nearest human being and scapegoat you. Requirements are changing very often, and we also need a system that is flexible and upgraded and updated without too much trouble.” (Participant 8, Middle manager)

Discussions about key factors that indicated quality of the system also discussed more detailed system capabilities, for example, there were concerns that using generic document management systems carried with it, risks that could have resulted from a lack of targeted specification. In terms of elicited responses, participants expressed concern that some of the DMS that were not custom designed for their use and as a result they lacked the expected security and specification provisions. As a result, they were not wholly suited to the data management expectations of the municipality for example, the systems did not utilise file-reference numbers; they lacked functionality that allowed for the generation of file covers that facilitated full description of the file and details about the legally specified retention period for records.

One of the most frequently cited issues related to staff's perceptions of their competence in using newly introduced systems. In particular, participants noted that the e-based DMS always required some level of up-skilling and from their experience, systems had often been introduced without any specific user training. The tendency for “hit the ground running” approaches to introducing new DMS were often perceived as indicative of a poor DMS. The range of challenges associated with a lack of training of prospective DMS users was aptly captured by one of the participants in their response,

“...to fully appreciate what a system can do, I need to have been trained so I understand its full capabilities. Unfortunately, we are often given no training and maybe a year after we have been misusing the system, we get some type of training. If a system comes with training from the onset, it assures me that it is a high-quality product.” (Participant 22, Head of Department)

5.15 EDUCATION/TRAINING AND DEVELOPMENT AS CONTRIBUTING FACTORS TO READINESS IN ACCEPTING NEW MODES OF WORKING.

Participants also identified their prior education and training as important contributing factors to their readiness for change in general and more precisely, their interest in utilising new document management systems within their workplace. The contributory nature of education toward readiness was offered in a number of differing ways by the participants. Firstly, there was a group of respondents who were of the view that, generic educational status was irrelevant to the uptake of new DMS but rather that, what mattered was the extent to which participants were educated about the particular change initiative that they were being exposed to. One participant aptly captured this position in her statement.

“I have a master’s degree and I feel that my ability to accept a new way of working has nothing to do with my school education but it’s the way that the proposed change managers introduce and orientate me to what I have to learn to do differently. With regards to document management systems, I expect that someone will educate me about different systems, and it is this that will change my readiness to take on this is new way of working.” (Participant 22)

The role played by the previous education and training in determining readiness for the uptake of new document management systems offered a number of different perspectives from participants. For example, those employees who had been educated to higher levels of study were, seen by some as being much more ready to take on new modes of working because of the general comfort with the idea of learning new things. This view was captured in responses such as that expressed by participant 8.

“I have noticed many of the employees who went to uni (sic) have little or no fear of new challenges because they have the attitude and relevant academic background to learn new requirements of the new way of working. Somehow, it also seems that the more educated one is and the younger they are, they have a tendency to accept new work requirements.” (Participant 8)

The above view seemed to cement the general acceptance, that a higher level of education among employees opened up greater possibilities with regard to readiness for change. The observation about age of employees provided an additional dimension that had been alluded to by others during different questions within the interviews.

Additional to the other views about the role of education and training, there was an alternate view expressed by some, which depicted a much more complex relationship between education and readiness for change. This view was eventually based on the idea that more educated individuals were likely to be more demanding in their questions about the need and basis of a proposed change. In other words, there would be more likely question whether a proposed new approach to working was in fact, likely to deliver the promised gains. This tendency towards being critical was associated with resulting delays in the adoption of proposed new working approaches. Some of the interviewees offered further insights into how being more critical is in fact a useful prerequisite for sustained change to occur rather than being a restraining force to change. Within this viewpoint, participants added that being critical before adopting a new practice insured that individuals were thoroughly convinced about the changes that they were engaging in so much so that it was likely that the new change would be sustained much longer as depicted in the feedback provided below.

“We must accept that it is more dangerous to just start doing new things in the workplace without asking questions because it is the very same people who end up changing back to their old way of working within one heart-beat. In my experience, I found that people who are difficult to convince to accept a new way of working tend to be the ones one most resilient in that new way once they accepted.” (Participant 24)

This latter opinion gave useful insight into the complex involvement between the education, training and one's readiness to accept a new technology within the workplace. What was evident however, was the fact that education and training development were in fact important contributors in one's readiness for change and clearly needed to be taken account of when understanding the factors that contributed to the uptake and acceptance of new technology. Furthermore, it is clear that the relationship between uptake, acceptance of technology and education and development is much more individualised than previously suggested within the literature and it would be improper to subscribe group behaviours to a relationship that plays out differently with different individuals.

5.15.1 PARTICIPANTS' PREFERENCES (AND RATIONALE) IN RELATION TO SELECTION OF DOCUMENT MANAGEMENT SYSTEM.

In determining what preferences participants had in relation to the selection of document management systems, interviewees offered a number of responses that were more related to the characteristics of preferred systems rather than actually identifying an exact named system. With regard to preferences, feedback highlighted those characteristics that they saw as deterrents to system choice, for example, systems that were deemed inaccessible, with poor security, limited storage and low upgrade-potential were avoided by all accounts by participants. The identification of such user-related features represented the most prevalent response-type amongst views expressed by interviewees. Responses often emphasised how powerful the absence of certain technical specifications was as a total deterrent, a fact clarified by some of the comments that were elicited from participants.

"I would never accept a system that had questionable security provisions because when things go wrong, it's my job on the line." (participant 14)

"systems with limited storage are such a problem that, we are usually forced to start using them but, within a month or even less, we are being asked to keep a back-up on the paper, this isn't introducing a new system in my eyes, its

duplicating. We are now likely to be stuck with the old and the new.” (Participant 19)

“I don’t know what it is but, I don’t have a lot of belief when new systems are being introduced by people who have either not used the system, they are pitching to us or they don’t understand its technical capabilities.... how can you sell something that you truly don’t know?” (Participant 31)

Importantly, interviewees also indicated that they would be unwilling to consider document management systems that were non-compliant with mandated records Management standards. With this observation, participants were indicating that, as long as the proposed document management system was the one that was suggested by formal structures within their workplace, they would be inclined to consider taking these up. One such response captured this view accurately.

“You always have to accept that your employer would have identified particular document management systems on the trust that it has the capabilities to effectively manage documents as per the organisational requirements. If that is indeed the case expect that their boss has checked out the system that they are proposing to the whole organisation.” (Participant 35)

Some of the feedback provided by participants indicated that they felt that they had no preference at all for any of the document management systems because every single system they were aware of had at least one significant shortcoming such as poor storage facilities, limited sharing capability and unacceptable security features. Participants such as respondent 8, indicated that,

“The choice is very complicated by the very fact that most if not all of the document management systems I had one significant weakness the very least. In effect we find ourselves having to choose between different propositions that relates to systems that are inadequate and one way or another, but yet, we are often being introduced yet another system with one problem or another.” (Participant 8)

Another view highlighted in the responses was about how the participants believed that many of the document management system options offered were inappropriate. In support of this, one participant said,

“No preference, always trying to fit round peg in a square hole and does not talk to strategy of department and to organisation.” (Participant 18)

The lack of preference with respect to the differing document management systems was also associated with the fact that the introduction and any alternative document management process, carried with it, inherent change management challenges that were neither justified nor rationalised by those requiring the use of a new technology. In essence, the feedback drew attention to the existence of “a force field analysis” consideration that participants saw as missing from the practice of their management. This is related broadly to Lewin’s force-field analysis in which there is a careful clarification of whether the driving forces behind a change does indeed outweigh the forces that may act as restraining forces against the proposed initiative.

In addition to generic comments about the type of accepted alternative document systems, participants highlighted specific systems such as SharePoint and within this, they indicated that it was a preferred system because of the flexibility and the fact that its web-based and online nature allowed for much more flexible sharing of documents if necessitated.

5.15.2 FACTORS RELATED TO QUALITY AND USABILITY OF DOCUMENT MANAGEMENT SYSTEM

Decisions related to system choice, uptake and eventually use of specified document management systems were closely related to the quality and usability of the specified document management option. This observation is an extension of acceptance factors highlighted within the literature and specifically within the technology acceptance model that served as the key theoretical foundation of the current study. During data collection, participants were specifically asked to deliberate on the factors that they believed to be associated with their decisions on whether or not to adopt a new technology related to document management practices. Within this conversation, several factors were

identified has being determining influences on whether or not particular innovations were adopted and accepted. In general terms participant believes that Quality in the usability of the document management system was key to decisions being made and within this definition about what quality entailed where offered by a number of respondents. Firstly, some of the participants indicated that they perceived quality to be a reflection of how well the proposed document management system complied with legislation and standards. In support of this view, one of the participants specified in her own words that,

“South Africa has an excellent set of legal provisions in standard to support I think I will manage document and a good-quality system should stick to these without excuse. For me, this is the primary measure and once I am happy that the system will comply with all the requirements and then there is no reason for me think otherwise about using it.” (Participant 18)

Secondary to the issue of compliance with legislation standards, the feedback elicited indicated that perceptions about the quality of the DMS were associated with how cost-effective and easy to use any suggested system was assessed to be. In general terms, the issue of how “user-friendly” the system was, as well as how “cost-effective”, both represented factors that participants took account of in deciding whether or not there was enough basis for one to adopt a new system or continue using a pre-existing system. One participant captured the assertion in their response,

“Some of the document management systems that are offered to us is the new way are so difficult to use and That it is unsurprising and that none of us have any interest. I have been using the same system for the last 20 years and I will not give it up and this it is clear to me that the new system will be easier to use. Our managers also tell us that these systems are more cost-effective however we have nothing to show for it our salaries continue to be lower than what we need, and I cannot see why investing in new skills helps me.” (Participant 7)

Further discussion with the participants highlighted a number of other factors that they perceived to be indicative of a good-quality document management system for example, they believed that the document management system needed to comply with archives

regulation and that the system should allow a wide range of functionalities including character search functions, system-report generation, varied saving options and a range of disposal possibilities. In summation, participants highlighted a number of technical specifications that they believed centrally defined what a quality system was, and these specifications were broadly related to ease of use, safety controls, range of functionalities and compliance with archives regulations. Similarly, participants conceptualised quality as a measure of how easy and convenient to them the system would be. Business considerations, for example the cost of the system, and the associated costs of maintaining the system, issues related to the sustainability of the system, were all not specifically highlighted by participants with the exception of two individual interviewees whose roles were specifically in finance within document management. They drew attention to the compatibility of the proposed new system with the old system and all highlighted this as a key consideration before one could adopt or accept new technology.

5.15.3 FEEDBACK FROM THE FOCUS GROUP DISCUSSIONS

In addition to the individual interviews (n=45), two focus group discussions were carried out with 5 and 7 participants each which included similar members as the individual interviewees. The focus groups were made up exclusively of (i) heads and deputy heads of department (ii) City managers and deputy managers and (iii) Councillors. The above-described method ensured heterogeneity in the study group and was not intended to maximise representativeness as this is not a priority within qualitative research (Johnson & Onwuegbuzie 2012). As noted here, the two focus groups, each included middle and senior managers and heads of departments much like the individual interviews. The rationale for conducting group discussions was to gain “group level” insights into what staff perceived to be factors that influenced the choice, uptake and continued usage of document management systems. The group discussions would focus on similar issues as those that had been addressed within the individual interviews but importantly, access to groups of participants allowed for more explicit and intensive exploration of specific issues that may have been highlighted but not adequately interrogated and within the current enquiry the following aspects were discussed in depth: - (i) important quality

considerations in system choice; (ii) Cost as a determining factor in choice of Document management system (iii) System Security as a determining factor in choice of DMS (iv) Perceived Ease of Use as a determining factor in choice of DMS (v) Perceived Usefulness as a determining factor in choice of DMS. Appendix 3 provides the schedule used for the focus group discussions.

5.16 EMERGENT THEMES AND DISCUSSION FOCUS AREAS WITHIN THE FOCUS GROUP DISCUSSIONS

5.16.1 Important quality considerations in system choice

Importantly, in discussing issues related to quality, participants were asked to share their insights and views about the considerations that they made with respect to choosing the correct document management system. The explorations highlighted a number of specific considerations as summarised in Table 5.2 below.

Table 5. 2 Specified Quality and Key Performance Consideration (Source: Author's Own, 2019)

Quality and key performance considerations for decision making about choice of document management system.	Participant quotation that exemplifies the cited consideration
System should offer an easy information sharing platform	"We really need a system that allows us to be able to share information across different types of users and amongst people with different security clearance levels as and when we decide." (Participant 3)
System should be user friendly and have a simple dashboard or interface with other document management systems.	"Change is often sold to us as something that is positive. More times than not, we are left with hard-to-use systems that take many months for one to become familiar with." (Participant 7)
Tentative identified system must be able to integrate with electronic record management systems (ERMS) so that it can effectively create, maintain and store electronic records.	"Many of the document management systems that had been introduced to us working isolation and we need something that integrates with other electronic records management systems so that we can deal with information from different sources" (Participant 21)
DMS should be able to cross reference subjects as some documents share more than one subject matter.	"Systems must be able to communicate with the other platforms without us having to manually enable this" (Participant 9)
Tentative system, should be able to send documents from DMS, via email/ outlook to promote a paperless transaction.	"Some of the systems that have been shared with us are inflexible and do not integrate well with popular email platforms... this must be avoided" (Participant 16)
System must be safe, secure and it must be cost effective.	"With document management systems, we all know that it is all about security, security, security and second to that, we have to afford it" (Participant 13)
System must be easy to use, accurate, complete, and valid.	"No matter how we feel about new technology, it can only mean something if it's easy to use" (Participant 12)

System must be able to mend a file plan, because a file plan is flexible to grow at any given moment as long as approved by provincial archives	"We need adaptive systems that are able to correct obvious errors in some of the inputs. Current systems often can't even mend a file plan" (Participant 11)
Documents must have organisational wide access but with monitoring and tracking.	"We need systems that can work across different departments within an organisation and from one organisation to the next" (Participant 7)
System should be able to operate with little or no downtime requirements.	"The business of managing documents is the 24-hour, 365-day-a-year activity and we need systems that have no downtime" (participant 14)
The DMS should be able to reliably create documents that are unique and have been allocated their own unique identity.	"System security is everything for us, and the first step towards that, is having a system that can automatically allocate unique identities to each of the documents that you put through it" (Participant 8)
System should have an automated labour reduction capability to reduce tasks and operations that do not have value or operational importance.	"It doesn't make sense that we end up with an electronic document management system that requires more human labour than traditional paper-based options. we need something that wholly reduces the amount of workload on us" (Participant 7)

The table above identifies some of the considerations that participants highlighted as being key factors that guided them towards making decisions about which document management system they preferred. As illustrated within the diagrammatic representation, each of the considerations were articulated by more than one participant and they broadly spoke to factors associated with system functionality, system security and the extent to which prospective systems were deemed to be user friendly. On closer analysis, this emerging pattern from the feedback highlighted the importance that individuals placed on issues that were "day to day operational issues" with a limited emphasis on the more strategic considerations as may have been expected from individuals in senior and strategic management positions. This observed dichotomy is noteworthy and was explored further within the focus group discussions. Within the focus

group, participants were asked to offer explanations for why strategic issues were not highlighted as consistently as the day to day operational issues. Feedback highlighted that participants believed that strategic considerations were ultimately the responsibility of the CEO and/or the most senior organisation executives and less so, their concern as operational and/or middle managers. One of the discussants went as far as arguing that strategic issues were never within the control of managers because,

“...decisions about which document management system to choose are made outside of our contribution and at times, the technical specifications that we require are not the reason behind why a particular system may be chosen for us to use. I think we have not spoken the truth by not mentioning the political influences that play a part in this process. For example, the government may decide that all its departments will be using system X and who are we, to say that we have different technical requirements.... decisions have been made already and its nothing about what we think on the ground.” (Discussant 3, Focus Group 2)

5.16.2 COST AS A DETERMINING FACTOR IN CHOICE OF DOCUMENT MANAGEMENT SYSTEM

As highlighted earlier, a limited number of participants individually highlighted the important influence that the cost of a DMS had in determining whether a particular management system could be utilised. On initial analysis, this was unexpected especially as “cost” is often cited by many across different operational issues, as a critical influencing factor. The limited attendance to cost that was observed within the individual interviews was compensated for within the focus group discussions (n=2) where group engagements deliberated substantially on the influence that cost considerations had on the choice of a DMS. Importantly, there were several discussion points that were highlighted by discussants, one of which was that the actual rand-value cost of a DMS was not the critical question that had to be asked. Instead, there was agreement that the concept of “value for money” was a more accurate depiction of what represented an important influence. One of the discussants, went as far as saying that,

“The system can be costly, what we care about is that it is aligned to records management specifications and is fully compliant with the requirements of the municipality. Obviously, one would expect that the identification of a suitable system would be aligned with the right budget allocation. Really, cost is only a problem if we mispend and procure a system that isn’t fit for purpose.”

(Discussant 3 Focus group 2)

In addition to this viewpoint, there were discussions about the fact that expenditure was often skewed in such a way that disproportionate amounts of budgets were utilised for buying the software with little consideration of the continuing need for aftercare and end-user support services. This type of oversight was blamed, by some for the lack of sustained adoption of new DMS. A view by Discussant 2, in Focus group one, highlights the nuances of the debate posed within the group discussions.

“We usually overspend on the actual purchase of the DMS and forget that the real work is ensuring that users of the system are adequately trained and supported through the teething problems. It’s no different to some who buys a BMW but isn’t ready for the expensive costs that go with its maintenance. It simply doesn’t make sense and many first-time users are discouraged by the lack of support they receive once a system has been dumped on them.” (Discussant 2, Focus group 1)

The quoted contribution above draws attention to a number of issues that were identified and spoken about within the focus group discussions. Firstly, discussants were concerned that the purchase and procurement of DMS was often led by individuals with little or no technical expertise to foresee implementation challenges and/or requirements. As a result, technical requirements and system specifications were often overlooked at the expense of other non-technical factors. Beyond this, there was a lack of prioritisation of “sustainability considerations” and this was blamed, by discussants, on the fact that, inappropriately qualified and positioned individuals were often given decision making powers in ways that were unhelpful. One discussant (Participant 3, Focus group 2) noted that,

“...the business of getting a DMS is very messy. The technical experts are normally not the ones who make the decisions. They just have to make do with a system that’s been bought by an executive who is no expert on these matters.” (Participant 3 Focus group 2)

5.16.3 SYSTEM SECURITY AS A DETERMINING FACTOR IN CHOICE OF DMS

Within the focus group discussions, individuals were able to highlight and offer collaborations on specific sectors that they believed to be key on issues related to the choice of document management system. System security was initially highlighted by individual participants and then elaborated on within the focus group discussions as notably expressed in one of the recorded viewpoints.

“The security features of a system are not negotiable, and I find it worrying that we have to be the ones who get blamed when a system proves to be unsafe, when it was the leadership who purchased the system. This is the main thing that puts me off venturing onto a new system. I hope I don’t get into trouble for expressing this, but we lose our jobs for security problems that were not caused by us.” (Discussant 2 focus group 2)

As is apparent from the above-quoted, a number of specific viewpoints with regard to this were highlighted. Firstly, within the discussion, there was agreement that system security was a non-negotiable aspect of any document management system because as expected confidentiality and integrity of data then dated requirements document that retain personal information in South Africa. Secondly, the discussions highlighted a specific note of the fact that document management systems needed to be modified so that there were properly aligned with the sensitivity of documents and/or the user confidentiality requirements. Collectively, the groups spoke about system security with noteworthy fear and concern for a number of reasons that included an awareness that any breach in security could result in loss of jobs for implicated employees and serious backlash in the case of breaches that ended up in the public domain. Even though System security was identified as a non-negotiable prerequisite to any document management system,

discussants in both groups indicated that the current document management systems that were in use within their working areas were in fact, not secure and had been responsible for breaches related to the unplanned disposals and deletions of critical information.

5.16.4 PERCEIVED EASE OF USE AS A DETERMINING FACTOR IN CHOICE OF DMS

Apart from the identification of the system security as the most significant and noteworthy factor, discussions within the focus groups specifically identified perceived ease of the system as one of the factors that have the impact of either making or deterring prospective users from adopting a new system. In identifying this as a key factor, discussants offered some challenges that they had experienced as a result of cumbersome and convoluted systems. These challenges were further worsened by the fact that employees were often required to start utilising systems with little prior education or training. One participant within the discussion noted,

“It would seem that new systems are often being introduced without giving us proper training. These systems are not like using a mobile phone and once trained, we need to be skilled on how to resolve system hitches. Without a solid base on this, we will go back to our old systems.” (Discussant 4 Focus group 1)

The lack of training of potential users was related both to poor uptake and poor retention of users of new systems within the focus group discussions. Participants were asked for further elaboration on this issue and an interesting observation was echoed. Participants felt that the combined effect of a convoluted and cumbersome system used by poorly trained staff was that, otherwise simple tasks were unnecessarily complicated to the detriment of productivity. Through the discussion of challenges experienced, the discussants were able to highlight that, for them, ease of use was about having a system that was not only user-friendly, but one that had a pre-user training package; one that complied with relevant standards, legislation and had streamlined steps and processes in all its functionalities.

5.16.5 PERCEIVED USEFULNESS AS A DETERMINING FACTOR IN CHOICE OF DMS

Any initial review of the literature on the acceptance of technology highlights perceived usefulness of the prospective technological innovation is one of the most key factors that determine choice, uptake and continued use of technology. With this foundational understanding, there was an expectation that the focus group discussions would have offered noteworthy and very significant insights into how perceived usefulness of a new technological innovation played a role within the municipality's adoption behaviours. In the discussions across both groups, perceived usefulness was agreed upon as an important predicting factor in uptake and adoption of a technological innovation but within this, the different group members went on further to explain what the key aspects of "usefulness" were from their perspectives. This operationalisation of usefulness was prompted by initial discussions within both groups where participants indicated that they did not agree with each other about what usefulness stood for. Further to this realisation, there was added agreement that, it was in fact the different characteristics of usefulness that represented the important factor(s). Guided by that, care was taken to record the different considerations that were synonymous with usefulness from the perspectives of participants. Firstly, the responses from the discussions highlighted that, "usefulness" meant that the "DMS must serve the specified purpose, as current systems were lacking and often required manual compensatory inputs." When asked to elaborate on this, participants expanded by saying they needed a system that was purpose-built for the municipality and not one that had been intended for another work area but was being "borrowed" for use within the municipality. Additionally, there was an identification of ten pre-requisite requirements that discussants associated with usefulness. In summation, the expressed views identified usefulness as indicating that the system would be:

- (i) Able to integrate with RMS as a DMS alone for public institutions poses a threat to institutional memory.
- (ii) Easy to access and reliable
- (iii) Able to deliver to required specifications within a reasonable cost.
- (iv) Must have the ability to uniquely save documents for ease of identification
- (v) Must be able to retrieve documents with the use of any character from search field
- (vi) Must be accessible from various office/ site locations and be available on demand

- (vii) Must be able to alert the user of archived documents that can be disposed of if no longer required.
- (viii) Must be adequate with continuous training being provided for the efficient use of the system.
- (ix) Must be introduced and supported with a change management curriculum to deal with likely implementation challenges.
- (x) Must have access control, especially to confidential and sensitive documents.

The above summarisations represent thematic phrases / terms that were highlighted during the discussions. As such, usefulness was seen as a multifaceted concept that included a wide-ranging number of concerns. By its very nature of being expansive, the influence that the perceived usefulness of a DMS had on system choice was seen as wide-ranging and relatable to wide range of social priorities.

5.16.6 KEY QUALITY IMPROVEMENT FACTORS

Within the survey questionnaires and the individual interviews, the word “quality” was referred to in participants’ discussions about what the priorities of an effective document management system should be. Even so, limited attention was given by respondents in defining or elaborating much more clearly what the term “quality” meant with respect to choosing an effective document management system. Within the focus group discussions, quality improvement was once again highlighted as a key factor that influenced choice of DMS. When discussants were asked for their views on what they understood about the term “quality” there was a range of attributes that the participants reported as being reflective of system quality. Within this, participants felt that system quality related to the system having:

- a) A file plan component.
- b) The search component that was not limited to the document number that the system allocates to the file.
- c) an inherent disposal system so that backlogs and piling up does not slow down processes.

- d) Adequate convenience, for example, so that it could have a functionality to be able to notify an end user of an awaiting document for their attention.
- e) Change management -readiness interventions to promote more substantive buy-in from users.

The feedback provided within the focus group discussions was limited to very specific issues and in many ways did not fully reflect the range of concepts that had been alluded to in literary sources. In respect of this, participants felt that quality was such an individually experienced phenomena that, it had to be expected that their impression of quality would not align with that expressed by others in different settings and contexts. One participant eloquently justified the differing perceptions around quality by saying,

“Quality is what the user says it is, one day it may mean having a DMS that is simple to use whilst for someone else, the more complex the DMS, the higher the perceived quality...this means that quality changes for one user to the next and trying to lock into a set of expected capabilities is not real.” (Discussant 6, Focus group 2)

Despite the appreciation that quality may differ for one user to the next, there was agreement among participants that quality, as a concept, was essentially about having a system that fulfilled the requirements of the client, and one that also ensured that high performance in key aspects was supported, whatever those performance and preference aspects were.

5.16.7 PERCEPTIONS ABOUT STRATEGY FOCUS AREAS AND THEIR INFLUENCE ON TECHNOLOGY ADOPTION

The Organisational strategy represents a key driver for the range of service activities that become priorities within any business. Similarly, within the municipality, the strategy focus areas were seen as important influences that had impact on the choice of DMS. The context within eThekweni municipality had very specific areas of emphasis that were at times aligned with and/or divergent from what the specific literary sources have identified.

5.16.7.1 Political Considerations

Within South Africa and specific to the current study, within eThekweni, political considerations play an important role in determining firstly, the preferred document management system options and secondly, the specific DMS that may be selected as the system that will be utilised by municipalities. The importance of this acknowledgement foregrounds the fact, politicisation of the process of DMS-choice can be so influential that it overrides other technical and financial considerations that would typically be the primary determining factors within other non-governmental entities. Beyond a generic acceptance that political considerations are key, South Africa's local government entities were reported, by some of the participants, to be heavily influenced by the fact that political terms of office work for key decision makers were five years long and decisions that were made often tended to be limited in terms of their sustainability outlook.

5.16.7.2 Public Sector/Local Government -Involvement

The development of well-considered processes for the appropriate selection of a document management system was found to critically be related to the range and types of involvement that the public sector and local government where are able to offer. Key to this, participants identified that the development of a specific ICT evaluation, monitoring and feedback framework was needed to provide guidance to stakeholders and potentially report on ICT initiatives. This evaluated model would differ sufficiently from the commonly utilised option of depending on an integrated development plan that can result in whole systems evaluation rather than specified ICT analysis. The above noted consideration underlines the fact that participants were unanimous in indicating that individual work fittings required very individualised evaluation. In that respect, it was important that specific work environment where I forwarded the locus of control to be able to determine the most appropriate document management system for their office without having to subscribe to provincial or nationwide decisions.

5.17 CENTRALISED, COMPREHENSIVE FOCUSED ICT STRATEGY THAT WILL IMPACT SERVICE DELIVERY POSITIVELY.

Feedback from participants specifically highlighted an inadequate ICT strategy as having a critical limiting influence on their uptake of new electronic document management systems. This explanation was not typically highlighted within other literary sources and represented a differing perspective than what had been identified in other studies reviewed. The identification of the more focused ICT strategy and was seen by some of the participants as having a defined positive impact on service delivery which in turn would offer motivation for employees to commit their support and engagement with the newly introduced document management system. Feedback specifically gave negative evaluation of non-centralised ICT structures, for discouraging employees from wanting to communicate to any new intervention that may require ICT support, with participants blaming these for discouraging employees from wanting to commit to any new innovation that may require ICT support.

5.17.1 STRATEGIC HUMAN RESOURCE MANAGEMENT (CHANGE MANAGEMENT INCLUDING RECRUITMENT, SELECTION, RETENTION AND TALENT MANAGEMENT, CULTURE)

Central to the decision-making considerations that relate to different document management systems, participant responses gave much attention to issues of human resource management. Within this, participants highlighted, very clearly, that many of the decisions around whether or not to utilise particular document management systems were influenced, to some extent, by human resources related issues. To this end, the availability of trained personnel, the culture within the workplace which respect to the use of new technology, the types of employees within an organisation and most particularly their skills with ICT, all represented important factors that determined how the municipality behaved in relation to the promotion of different DMS. Within eThekweni municipality, the prioritisation of ICT skills was not specified within recruitment plans except for those positions that were for ICT-specific positions. This recruitment strategy was identified by participants, as an important contributing factor to self-made reports in which participants viewed themselves as basic-level ICT users.

5.17.2 TRANSPARENT, EFFECTIVE SUPPLY CHAIN MANAGEMENT -PROCESSES

Across much of industry within South Africa, supply management processes often play a critical role in decision-making particularly because of the historical concerns about corruption and lack of equity in the selection of service providers. With respect to the identification of an appropriate document management system, supply chain management processes are critical as it is this aspect of the decision-making process that can override any other technical consideration. In essence, participants drew attention to the fact that regardless of any other considerations, choice was determined by whether or not there was willingness within the municipality to purchase particular products from specific service providers. This latter realisation can result in the disqualification of a document management system that may have preferred only because it did not meet the procurement and supply management requirements.

5.18 FINDINGS FROM THE ONLINE SURVEY

As noted earlier, the final data collection phase of the study was a questionnaire-based survey in which identified respondent groups were represented. As per sampling plan, a total of 186 respondents took part in the survey aspect of the study. The sampling plan for the survey (Phase 3) was based on a Parent / Source Population = 23000 employees employed by eThekweni and who utilise the services of the administration unit. The target Population was made up of 344 respondents comprised of. Mayor (n=1); Executive Committee (Exco)(n=10); Councillors (n=206); City Manager (n=1); deputy city managers (n=6); Heads of departments (n=40) and Deputy Heads of Departments (n=80). Through simple randomized sampling, a total of 186 survey respondents from the parent or source population took part in the survey. Much like the other data collection phases, the survey focused on eliciting feedback from respondents about the factors that respondents believed to be influential in determining their selection, uptake and consequential utilisation of an electronic DMS. The replication of this enquiry within a quantitative survey was intended to assess the extent to which findings from previous phases of the study could be generalisable to wider population groups.

5.19 SAMPLE CHARACTERISTICS FOR THE ONLINE SURVEY

5.19.1 RACIAL DISTRIBUTION OF RESPONDENTS

Racial distribution of respondents within the online survey was similar to mainstream population distribution and as such, the majority of the respondents were Black South African (n=97; 52.15 %), followed by Indians (n=46; 24.73%) and coloureds (n=16; 8.60%). Figure 5.7 below provides a detailed overview of all 186 respondents who took part in the online survey by racial identity.

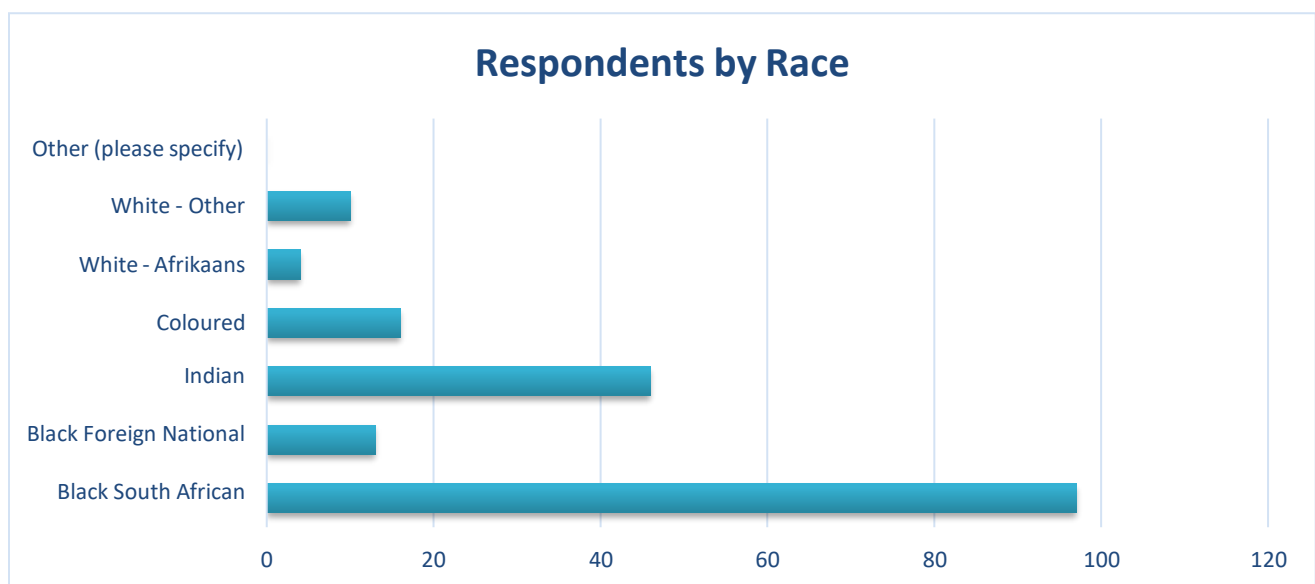


Figure 5. 7 Respondents by Race (Source: Author's Own, 2019)

5.19.2 AGE DISTRIBUTION OF SURVEY RESPONDENTS

The sample of management respondents who took part in the online survey had the highest representation of 30-39-year olds (n=43; 23.19%) followed by those aged between 50-59 years old (n=36; 19.35%). Notably the cohort included three respondents who are under the age of 19 years old and a significant proportion were aged between 59 and 65 years old (n=31, 16.67%). Also, of note was the fact that 23 respondents did not provide an answer to the question about age. Possible explanations for this may relate to respondents doing this as conventional information that did not need to be shared and/or concerns that revealing this information with somehow prejudice the respondents

within their day to day work. Detailed information on the ages of the respondent is diagrammatically represented below in Figure 5.7.

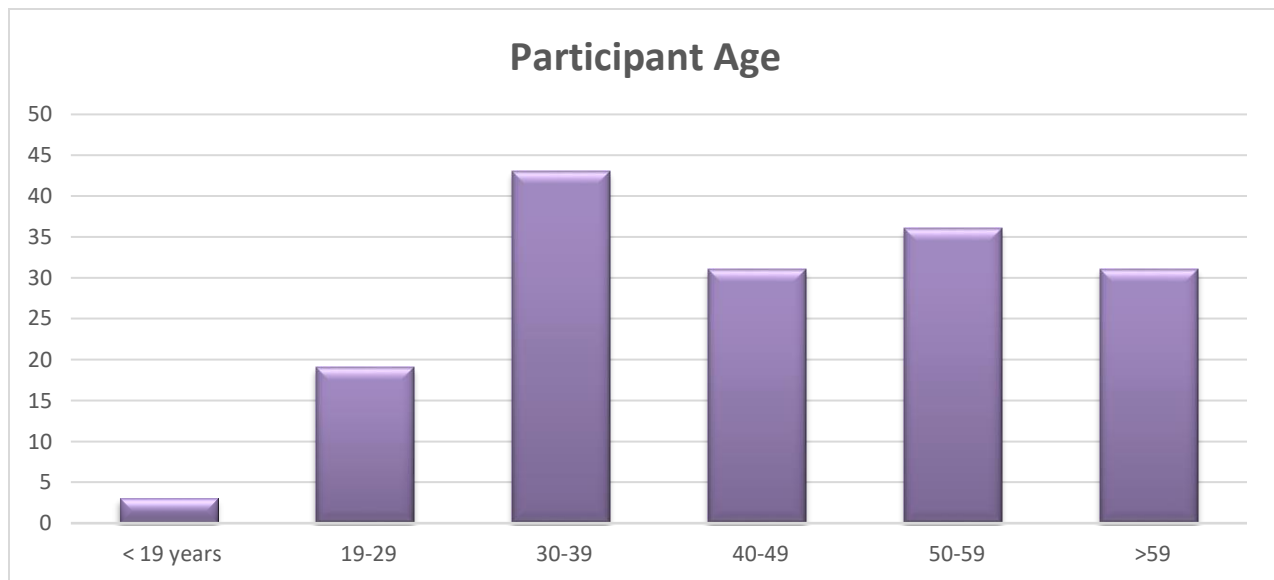


Figure 5. 8 Participants Age (Source: Author's Own, 2019)

The age of respondents was a specific interest because it is often cited as an influencing factor in determining whether individuals have a propensity for taking up new technologies or not. With respect to that, the group of respondents was aged between 30 years and 59 years old. These age groups that have not been traditionally identified as technophobes and as such, the cohort of middle and senior management was not viewed as having specific age-related barriers / motivating characteristics that may have influenced / hindered their interest and/or uptake of a technology-based document management system.

5.19.3 RESPONDENTS' LEVEL OF EDUCATION

Respondents were asked to provide information about their highest educational level attained and from this process, more than half of the respondents (n=96; 52%) indicated that they had reached or attained at least, a secondary school level education. Those with at least a tertiary education qualification, represented 32% (n=59) of the respondent

cohort, followed by those with only primary education (n=31; 17%). These observed findings were noteworthy for two specific reasons. Within a group of individuals occupy middle and senior management positions, it would have been reasonable to expect that most if not all the respondent at least had achieved a matric level qualification. Within this, it would ordinarily have been unlikely that up to 31 (17%) of a group middle and senior managers had only achieved primary level education. The observation about the most dominant level of education attainment within the group was especially important because of the relationship that previous literature has suggested, with respect to the relationship between an individual's educational level and their engagement with a newlyintroduced document management system. Figure 5.8 below provides a summary of therespondents by level of education.

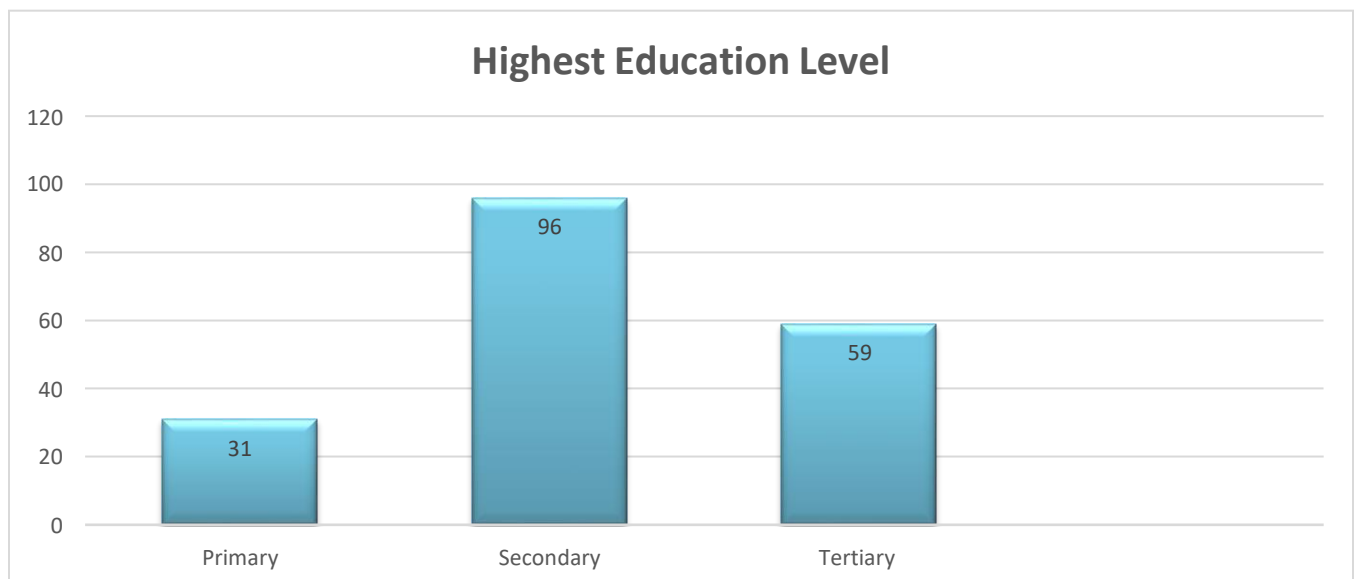


Figure 5. 9 Highest Education Level (Source: Author's Own, 2019)

5.19.4 OCCUPATIONAL POSITION OF RESPONDENTS WITHIN THE MUNICIPALITY.

For inclusion within the study, the respondent had to be in middle or senior management positions and the division of respondents by occupational position is summarised below.

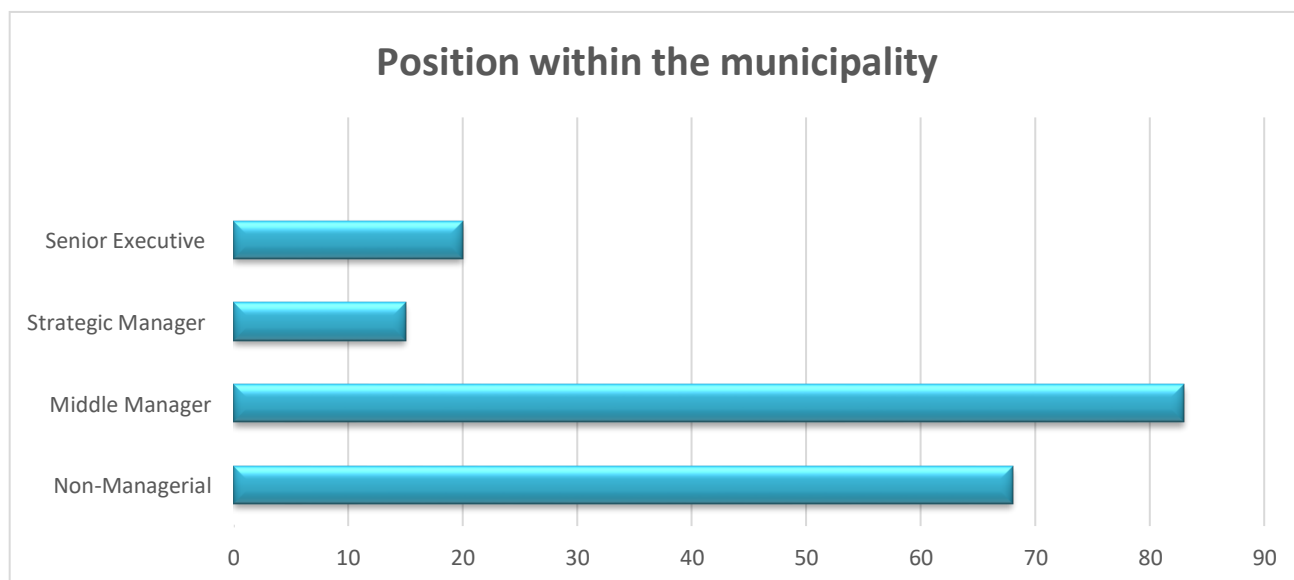


Figure 5. 10 Position Within the Municipality (Source: Author's Own, 2019)

As shown above, the most represented category of managers where individuals who are in middle management (n=83; 45%%) followed, by individuals in non-managerial positions (n=68; 37%).

5.19.5 RESPONDENTS' YEARS OF EMPLOYMENT WITHIN THE MUNICIPALITY

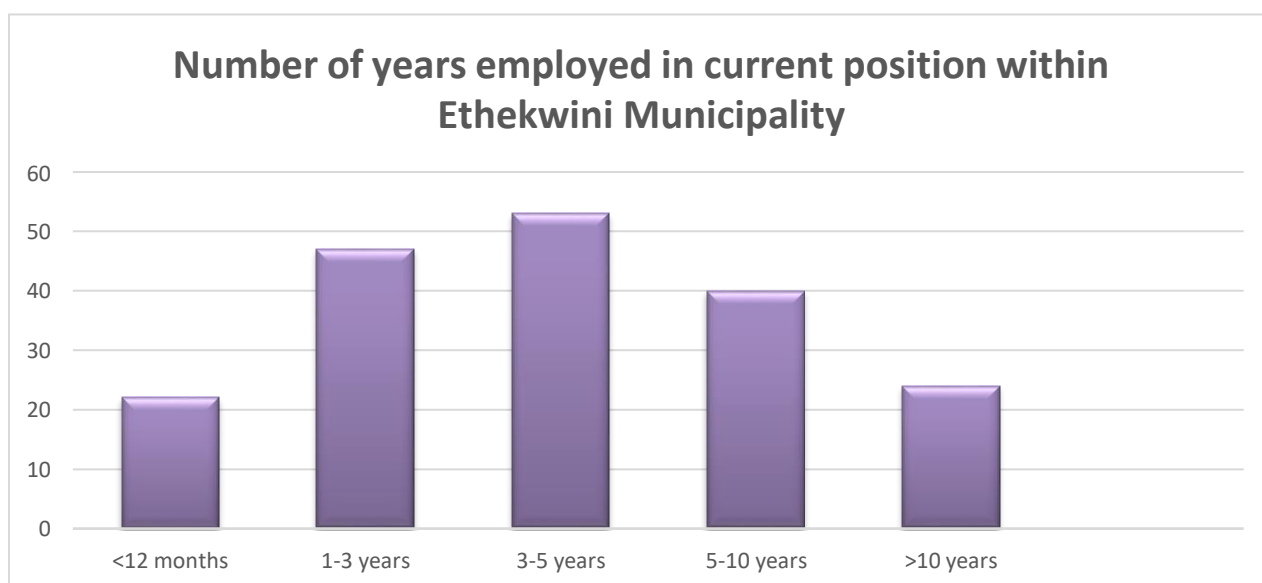


Figure 5. 11 Number of Years Employed in eThekweni (Source: Author's Own, 2019)

As shown in Figure 5.10 above, most of the respondents had been employed within their current positions for at least three years and as such were expected to have sound awareness of their role expectations and most importantly what the key document management system requirements were. This observation was noteworthy as it addressed, a concern previously highlighted within literature, about the fact that a lack of familiarity with job requirements was often a factor with limited individual employees' ability to meaningfully contribute to decisions about whether the new technology was acceptable. The findings from the current study suggests that respondents where adequately experienced in their respective positions and therefore could offer meaningful insight into the barriers and motivating factors for their decisions to use (or not use) electronic document management systems.

5.19.6 RESPONDENTS' SELF- ASSESSED IT COMPETENCE

Data was collected from respondents about their self-assessed competence in information technology (IT). This variable was identified as a factor of interest as predecessor research (Ammar and Ahmed, 2016) has shown that perceived competence in IT can have an influence of motivation to uptake a new technology. With this as a foundational understanding, respondents were asked to rate their own perceived IT competence as a basic user, intermediate user or an advanced user. Figure 5.1 below provides a summative overview of feedback from respondents.

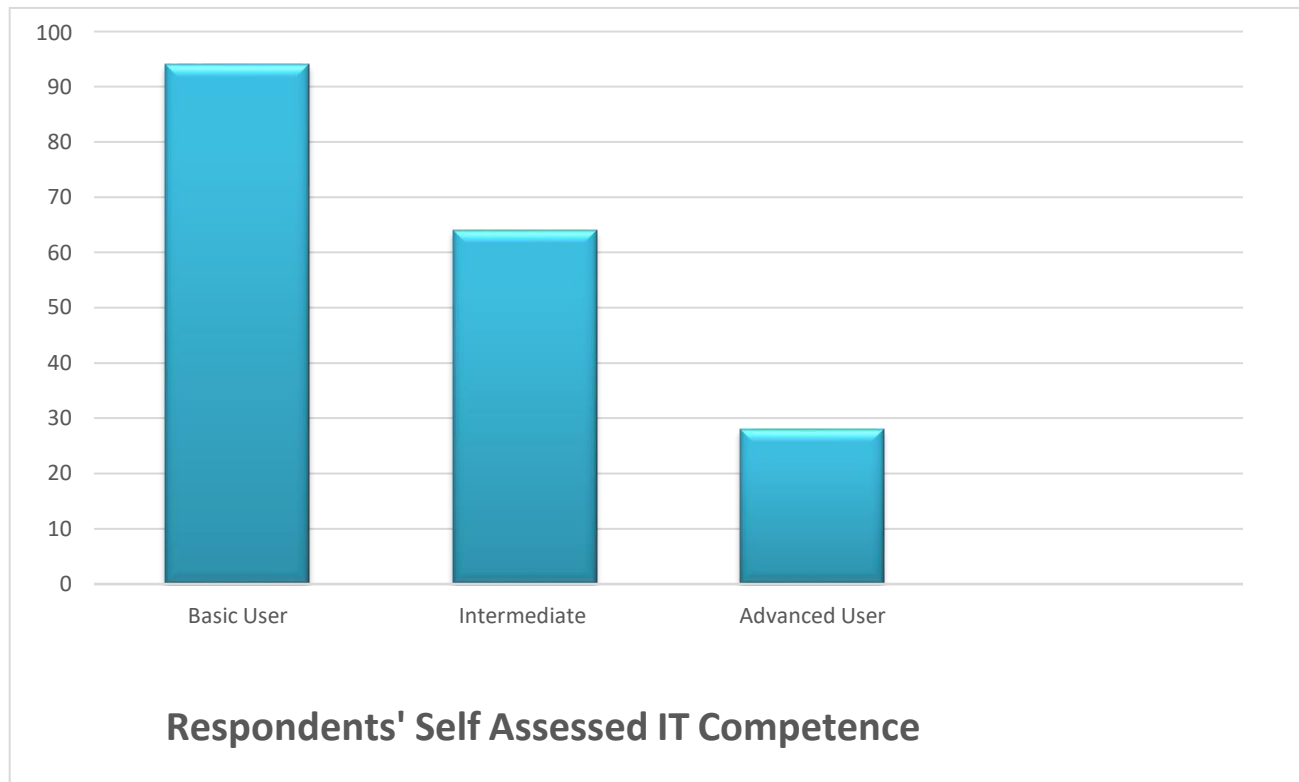


Figure 5. 12 Respondents' Self Assessed IT Competence (Source: Author's Own, 2019)

Over half (n=94; 51%) of the respondents identified themselves as having “basic-user” competencies in IT. 34% (n=64) and 15% (n=28) of the respondents indicated intermediate and advanced user status, respectively. The significantly higher number of basic users is likely to have an influence on respondents’ attitudes towards the adoption of new technology and according to Yarmey, (2010) and (Livingstone, 2012), such pre-existing attitudes may have critical decision making influence on decisions about the uptake of new technology.

5.20 RESPONDENTS' FEEDBACK ON INFLUENCES THAT CONTRIBUTE TO USER DECISIONS ABOUT WHETHER OR NOT TO UTILISE A NEWLY INTRODUCED DOCUMENT MANAGEMENT SYSTEM.

Using the current study's developed conceptual framework, a combination of the modified technology acceptance model (TAM); The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris & Davis, 2003) and the Total Quality Management Theory (TQM) (Silva *et al.*, 2014), directed the researcher to a number of variables of interest that included:

1. Attitude towards use
2. Perceived Cost
3. Perceived Ease of Use
4. Perceived Usefulness
5. Satisfaction and enjoyment
6. Subjective norms
7. Behavioural control
8. Perceived security
9. Perceived risk
10. Perceived compatibilities
11. Individual mobility
12. Personal innovativeness.

With each of these variables, respondents were asked to offer feedback that ranged from strongly disagree to strongly agree on a number of statements that related to the above specified themes. The responses that were offered by individuals who took the survey are captured and presented below in respect of each of themes that were investigated.

5.20.1 ATTITUDE TOWARDS USE

Each of the respondents was asked to offer their views and perspectives about the role that pre-existing attitude had towards any document management system and more specifically whether this attitude contributed to their decision on whether to use it. In majority of respondents disagreed, to different levels with the view that pre-existing attitudes had any impact on decisions on whether to use a new DMS. Most specifically,

147 (79%) of the respondents either strongly disagreed or disagreed or had neutral opinions about the influence of attitude toward use and its impact on whether this influenced one's choice to use a specific DMS. Similarly, respondents offered their position views about the influence that the attitudes of colleagues towards any document management system had on an individual's drive to accept this technology. Respondents largely rejected this position, with 146 (79%) of the respondents indicating some level of disagreement with the posited statement. A full overview of respondent responses as they related to the theme of "attitude toward use" are presented in the table below.

Table 5. 3 Attitude Towards Use (Source: Author's Own, 2019)

Question (Theme: Attitude Towards Use)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
My pre-existing attitudes towards any document management system plays an important role in deciding whether I use it.	20	102	25	24	15
The attitudes of colleagues towards any document management system are likely to influence me in similar ways and will drive my decision to accept this technology	33	73	40	29	11
I accept that my attitudes towards any document management system does not have any bearing on whether or not I decide to use it.	10	8	47	86	35

Using the latest document management system will earn me support and favour from my peers and my management.	29	59	55	23	20
My attitude toward accepting a new document management system may affect my performance and that of the rest of the department in which I work.	10	30	40	60	46

One close assessment, respondents Feedback on the five domains that are related to attitudes towards use, broadly indicated that individuals felt that their attitude had limited influence on the decision about whether to use the newly introduced document management system. In summation, individual attitude towards a specified document management system was seen as having minimal influence on the ultimate decision on whether or not to use that specific alternative. Perceived costs will feature next.

5.20.2 PERCEIVED COST

The rationale here was to attempt to measure the impact of the perceived cost on Participants behaviours with regard using and adopting new innovation and technology. TAM is extensively accepted as a guide to understanding user's acceptance behaviour. Perceived Usefulness and Perceived Ease of Use are the core determinants of individuals behaviours intention to accept or reject new technology. Whilst TAM is used as the baseline model Perceived Cost are viewed as additional independent variable (Rind, Hyder, Saand, Alzabi, Nawazi & Ujan, 2017).

The table that follows is indicative of the respondent's behaviours with regards acceptance or rejection of new innovation or technology.

Table 5. 4 Perceived Cost (Source: Author's Own, 2019)

Question (Theme: Perceived Cost)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
My perception about the fairness of the cost of the proposed document management system is an important consideration in whether or not I decide to accept and adopt that system.	48	75	48	10	5
The perceived cost of any document management system has no influence on my decision to accept and/or adopt this system.	7	4	12	98	65
Cost of a newly introduced document management system represents one of the most important determining factors that influences acceptance of that system.	59	65	40	15	7
The cost of any new system determines its quality.	24	66	53	10	33

With regard the fairness of the cost impacting their decision to accept or adopt the innovation, participants 75 (n=40%) disagreed, with a further 48 (n=26%) strongly disagreeing with the statement with regard their acceptance or rejection of the innovation. Participants 48(n=26%) remained non-committal. In summation the majority of respondents 123 (n=66%) held the view that the fairness of the cost is not a consideration when adopting new innovation. The next determinant to be discussed will be Perceived Ease of Use.

5.20.3 PERCEIVED EASE OF USE

The Technology Acceptance Model (Davis et al. 1989) is a measure of the relationships of Perceived Ease of Use (PEOU), Perceived Usefulness (PU) and Attitudes aligned to Behavioural Intention (BI).

PEOU is one of the determinants that participants must embrace for the adoption and acceptance of new technology. Understanding the participants perceptions may help to increase the sustained use and adoption of new innovation. The following table is a numerical summary of their Perceptions regarding Perceived Ease of Use.

Table 5. 5 Perceived Ease of Use (Source: Author's Own, 2019)

Question (Perceived Ease of Use)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
I will not use a system that I view as difficult to use regardless of how much it is likely to improve job performance.	37	80	32	23	14
I am not deterred from using a DMS by its apparent difficulty in use.	16	23	40	72	35
I accept that all new systems will be difficult to use.	17	30	38	65	36
I believe that perceived-ease-of-use is one of the key most important determining factors which influence my decision to use any DMS.	14	13	28	82	49
Difficulty in using a DMS is often a result of computer literacy more than anything.	29	43	71	33	10

Five position statements were included to test the Participants perceptions with regard Perceived Ease of Use. With regard the first position statement about not using a difficult system irrespective of job performance improvement 80 (n=43%) disagreed with the statement. Simply put these participants were of the opinion that the improvement in job performance or ease of use far outweigh that of a difficulty system or invention. A further 37 (n=20%) held the view that they too will also accept the system irrespective of the difficulty factor by strongly disagreeing with the position statement.

With regard the next statement posed participants 72 (n=39%) were of the perception that the difficulty of the system was not a determining factor on acceptance of the technology. A further 35 participants (n=19%) strongly agreed with the statement. A combined number of participants 39 (n=21%) disagreed or strongly disagreed with the statement. Accepting that all new systems will be difficult to use participants 65 (n=35%) agreed with the statement. Participants 36(n=19%) strongly agreed .The participants that remained neutral were 38 (n=20%)The fourth statement that PEOU is a critical factor in deciding their acceptance and influencing their adoption participants 82(n=44%) with a further 49 (n=26%0 strongly agreeing. The combined percentage of 70% viewing this as one of the most important criteria's is noteworthy. The final statement with regard the lack of computer literacy having a negative effect in adopting and using a system, participants 77(n=38%)remained unconvinced and remained neutral .However, participants 33(n=18%) agreed that difficulty in using a DMS is often attributed to simply a lack of computer skills. Participants 43(n=23%) on the other hand disagreed with this position. A further 29 (n=16%) strongly disagreed with this positional stand. The next determinant to be discussed is Perceived Usefulness.

5.20.4 PERCEIVED USEFULNESS

Initially informed by the technology acceptance model (TAM), Perceptions related to the usefulness of any new innovation were seen as having some relevance on whether or not individuals take up the innovation. In pursuing greater insight into the role played by perceived usefulness, five related position statements related to the role played by perceived usefulness. Within the theme of perceived usefulness, exploration of respondents' viewpoints was focussed on issues related to a system's ability to deliver the promised outcome; client perceptions about the performance of the system and the ability of the system to simplify specified tasks. Broadly perceptions about the usefulness of the system were shown to have a statistically significant influence on whether individuals used a specific DMS or not. The table below offers a numeric summation of the response in relation to the theme of perceived usefulness.

Table 5. 6 Summation of Perceived Usefulness (Source: Author's Own, 2019)

Question (Theme: Perceived usefulness)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
The fact that a DMS does what it promises to achieve is the most important factor to consider when deciding whether to accept and/adopt new technology.	13	31	21	65	56
Usefulness of a DMS means that it will make the job less difficult to do.	13	23	35	62	53
Usefulness of a system strongly influences how employees perceive it	17	26	30	60	53
Usefulness can only be measured by whether the system makes important performance improvements for clients of the service.	10	9	11	105	51
The real usefulness of a system can only be determined after it has been fully implemented.	11	7	16	112	40

5.21 SATISFACTION AND ENJOYMENT

Apart from an assessment of the appropriateness of a system to the task at hand, the researcher carried out a specific evaluation of the role that satisfaction and enjoyment of the system had on decisions on whether to use it. A detailed analysis of areas included in this theme is provided in the table below.

Table 5. 7 Satisfaction and Enjoyment (Source: Author's Own, 2019)

Question (Theme: Satisfaction and Enjoyment)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
My satisfaction in using a DMS will influence my support of its continued use.	21	30	42	54	39
Satisfaction and enjoyment of using a DMS have limited or insignificant influence in determining whether or not the system will be consistently utilised.	20	41	30	60	35
User satisfaction is primarily a result of how well the DMS performs identified job-tasks.	14	20	29	73	50
Large workstations will have limited influence in determining my satisfaction and enjoyment	16	40	50	48	32
The ergonomic design will play a huge role in my continued utilisation of the DMS	12	30	40	70	34

As highlighted above, respondents held a dominant view that, having a satisfactory experience whilst using a document management system had a strong positive influence in whether or not individuals would decide to use the system in the future. To this end, feedback indicated that satisfaction in using a DMS was seen as a highly influential factor by 46% (n=86) of the group of individuals that took part in the study. Similarly, respondents were of the view that user satisfaction with the particular system was related to higher performance of that system and that this in turn was reflected in survey findings that showed that, 152 (81%) of the respondents believed that the more satisfactory and more enjoyable their experience was in using a DMS the more likely they were to perform in the given task much better than if they used a less satisfactory system alternative. The proxy relationship between user satisfaction and enjoyment of the system and better task performance will also relate to any increased likelihood of individuals choosing the proposed DMS.

5.22 SUBJECTIVE NORMS

Assessment of the role that subjective norms had on decisions to take up a DMS involved asking respondents to comment on a number of thematic areas that included:

1. The influence of peers (both same level and superiors).
2. The influence of industry wide reputation.
3. Personal determination as a basis for decision making over the influence of others.
4. Local DMS versus internationally imported options.

The table below, provides an item-by-item overview of the responses that were elicited with regards to subjective norms.

Table 5. 8 Responses on Subjective Norms (Source: Author's Own, 2019)

Question (Theme: Subjective Norms)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
My peers' opinions about the newly introduced DMS influence my own motivation towards using it.	30	41	52	43	20
Industry reputation as it relates to a DMS influences my willingness to accept and adopt it.	30	58	36	29	33
My decision(s) about whether to utilise a newly introduced DMS are entirely based on my own self-assessment of benefits with little influence from others.	14	21	30	64	42
The reputation of the DMS held by senior colleagues is an important influence in my own beliefs about the system.	20	39	55	41	42
Locally developed DMS can deliver an equally efficient service than those developed in more developed countries in the northern hemisphere.	32	42	42	42	42

In summary, respondents were of the view that the opinions of their peers (same level and superiors) were significantly important in influencing their own motivation towards up taking a new DMS. For example, 62% (n=115) of the respondents agreed that the opinions of their peers had a direct and positive relationship on the likely motivation to take up a new DMS. Furthermore, the industry reputation of the DMS was found to be an

important deciding factor by 69% (n=128) of all respondents. In basic terms, these findings were individually and collectively alluding to the fact that direct peers and industry derived reputation with important drivers in guiding individuals on whether or not a new DMS would be taken up. Most notably, the responses from the online survey showed that non-reputations of senior colleagues different in their impact when compared to the influence of same level peers. In relation to this, nearly three-quarters of the respondents (74%) strongly agreed or agreed that the reputation of the DMS held by their superior colleagues played an important influence about their own beliefs in relation to that system. Finally, respondents were asked to offer insight into whether they preferred and locally developed DMS over one from a developed, western country. With respect to the latter, there was agreement that a locally developed DMS matched an internationally derived alternative and in respect of that, 126 (68%) respondents agreed that they would treat local DMS systems with the same respect and scientific trust as they did the international alternatives.

5.23 BEHAVIOURAL CONTROL

Perceived behavioural control is the construct that Azjen (1988) introduced into his theory of planned behaviour. This was the determinant of both behavioural intention and the behaviour itself. Both these constructs allude to the persons beliefs that the pattern of behaviour in question is under their control, operationally however, perceived behaviour control is often measured by the ease or difficulty of the behaviour (Wallston 2015). Suffice to say however, that regardless of the attached label to the construct, really what matters is actually engaging in that behaviour, an analysis is detailed below in Table 12.

Table 5. 9 Responses on Behavioural Control (Source: Author's Own, 2019)

Question (Theme: Behavioural Control)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
It is important for me to be able to be contributing to the development of a DMS as an intended user.	16	33	30	61	46
Being involved in the development and regular evaluation of a DMS provide important motivation to me to accept and adopt it.	20	35	23	50	58
Development of a DMS is for IT experts and there is no need for my involvement as a potential user.	16	30	54	50	36
Being asked to adopt a DMS that was decided on by my management without my involvement negatively influences my motivation to use the system.	14	25	60	59	28
The most important contributors for determining the design of an intended DMS must be the potential users rather than the IT developers.	28	13	43	64	38

A large number of respondents (74%, n = 137) believed that it was important for them to play a contributory role in the development of the particular DMS and more so as intended users of that particular technological initiative. A further 70%, (n= 131) alluded to the fact that their motivation to accept and adopt the system relied heavily on their involvement and continuous monitoring and evaluation of the DMS. Participants were clearly in the

majority when asked about their acceptance and use of a system decided upon by their management, 147 of them (n= 79%) emphatically agreed with the posited statement, that it would affect them negatively. The respondents (145, n= 78%) finally were adamant that potential users must be involved and play an integral part in the design and developmental solution of that particular DMS.

5.24 PERCEIVED SECURITY

TAM is extensively used as the framework to measure and investigate the impacts of external variables with regard system adoption and usage. The dimensions of security are added to the technology acceptance embodied by the TAM and the Extended Theory of Planned Behaviour. The sentiment of technology adoption and acceptance like the models used to describe it has progressed over the years in an endeavour to better capture the behavioural components of perceived security (Winston, 2016). The responses of the participants are captured in Table 13.

Table 5. 10 Responses on Perceived Security (Source: Author's Own, 2019)

Question (Theme: Perceived Security)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
The assessed security of a DMS is of paramount and critical importance in deciding whether to accept and/or adopt it.	17	25	23	69	52
As an end-user, the security of a DMS is not my concern but rather, that of senior management who decided on its procurement.	30	60	70	14	12
System security is primarily related to system-user behaviour's and can be individually determined by different users.	16	40	53	41	36
Security concerns of a system should be balanced against potential usefulness of the system in achieving performance requirements.	10	22	36	63	66
Systems with limited security but high usefulness can be adopted with precautionary measures e.g. using an Electronic –DMS (EDMS) with a paper-based alternative to protect against potential security shortcomings of the newly introduced EDMS	8	14	57	56	51

Categorically 77% of the participants (n=144) stated that security is of critical importance and agreed with the statement. Another rather interesting statistic (86%, n= 160) revealed that security issues were definitely their concern and not that of Senior Management only. In summation most respondents (164, n= 88%) agreed with the statement that a hybrid system could be used to overcome potential security shortcomings. Respondents were

prepared to accept the high usefulness of the system while implementing precautionary measures to mitigate the security limitations.

5.25 PERCEIVED RISK

The table presents a consolidated response from the participants with regard the theme of Perceived Risk. This will present a better understanding of how perceived risk is viewed and the extent of the role that it plays in the adoption and acceptance of DMS or other technological initiatives aligned to the TAM. Several studies exhibit that the perceptions of individuals pertaining to risk in relation to adoption of new technologies plays a pivotal role in accepting and adopting technology (Mutahar and Daud, 2018). It is crucial to engender or enrich TAM with the perceived risk components as customers and clients position risk high up when assessing products or services for purchase, adoption or acceptance.

Table 5. 11 Assessing Perceived Risk (Source: Author's Own, 2019)

Question (Theme: Perceived Risk)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
New technology always poses more risks than any comparable existing systems.	32	41	43	43	27
Perceived risk is the single most important reason for not utilising a newly suggested DMS.	22	33	35	60	36
My assessment of a system's risk is influenced by the views of peers	43	60	39	30	14
Perceived risk of a systems can be locally managed by training potential users to be more security literate.	10	19	31	72	54
Assessment of a systems risk should be undertaken by strategic managers who procure new DMS and is not a concern for potential users.	17	22	58	51	38

Of the 186 respondents 131 (n= 70%) agreed with the posited statement that perceived risk is the singularly most important factor for not utilising a new DMS. Perceived risk is seen as the antecedent towards technology acceptance and adoption. Almost 129 participants (n= 69%) countered that training and awareness of the potential risk can assist in mitigating the perceived risk. A large contingent of participants however were of the view that risk assessments must be expedited by strategic managers and should not a concern for potential users of the system.

5.26 PERCEIVED COMPATIBILITY

Venkatesh and Davis (2000) very simply states that perceived compatibility is a measure of individuals perceptions of how relevant the technology is to one's job. The following table below captures the various responses of the respondents with regard the following four domains.

Table 5. 12 Perceived Compatibility (Source: Author's Own, 2019)

Question (Theme: Perceived Compatibility)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Compatibility between DMS capabilities and the requirements of the service are a critical deciding factor in my decision to uptake / accept and/or adopt a new technology.	9	24	28	79	46
Determinations about a DMS are outside the locus of control of end-point users and do not play a role on an individual's motivation to use a newly introduced system.	8	22	60	57	39
End-point users of a DMS do not possess the in-depth expertise about a system to make accurate judgments about its compatibility with the job requirements.	13	30	32	66	45
Compatibility of a DMS with the job requirements can be assessed after an agreed trial period (e.g. of 6 months) and I am willing to fully utilise the system in its trial period even if it means duplicating systems with the pre-existing alternative(s).	19	33	43	49	42

A significant number of respondents 153 (n= 82% strongly agreed, agreed or were neutral with the posited statement that there must be alignment between the DMS capabilities and the relevance of their job. Further testament to the fact that end point users do not have the necessary expertise to accurately judge its compatibility with the job requirements is reflected in the 143 (n= 77%) respondents displaying, neutral, agree or strongly agreeing sentiments of the posited statement. Respondents (n = 134, 72%) also

showed willingness to compromise by agreeing to a trial period and thereafter evaluating the compatibility of the DMS in conjunction with the job requirements.

5.27 INDIVIDUAL MOBILITY

TAM has undergone numerous modifications and extensions in order to include additional variables to facilitate its ever-increasing predictive power. Technologies have increased mobility of human interactions both in social spheres and professional domains. The capacity of flexible adaptable technologies has given rise to boundaryless work locations and the ability to work away from the “office”. Table below presents the four domains in relation to individual mobility, incorporating the participants responses.

Table 5. 13 Individual Mobility (Source: Author's Own, 2019)

Question (Theme: Individual Mobility)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
The ability for me to personally customise my user functionalities plays an important role in influencing my decision(s) to accept and/or adopt a DMS.	29	54	39	47	17
Systems that allow individual customisation to provide more efficient performance with regard to core job expectations.	20	40	29	54	43
Being able to customise my functionalities is not a necessary pre-requisite to me using a using system.	17	35	40	55	39
Flexibility of a system is one of the most important aspects that influence my motivation to accept and /or use it.	12	14	10	77	73

With regard personal customisation of user functionalities in relation to acceptance or adoption off the DMS, 67% (n= 122) of the respondents were neutral, disagreed or strongly disagreed whilst 55% (n=103) affirmed their stance with the statement. When respondents were asked whether customising the user functionalities was a pre-requisite

to utilisation, 134 (n= 72%) felt it was not a criterion in usage. Flexibility on the other hand proved an important consideration, and 160 (n = 86%) participants were emphatic in their response. To summarise flexibility was one of the highest considerations as viewed by the respondents as an influencing aspect of system acceptance or usage.

5.28 Personal Innovativeness

Agarwal and Prasad (1998) drawing from Rogers (2003) innovation diffusion theory put forth a construct termed personal innovativeness situated in the realm of information technology (PIIT). Their definition involved “a willingness of an individual to try out any new information technology “. The innovativeness of an individual is measured in a continuum from high to low. The measurement construct helps track and identify the early adopters of information technology and also those adopting later on (Kerttuli, Makkonen, Frank & Riekkinen, 2016). The interpersonal traits can be potentially crucial and significant drivers in the adoption and acceptance of new technological innovations. The following table comprises the participants response with regard personal innovativeness.

Table 5. 14 Responses to Personal Innovativeness (Source: Author's Own, 2019)

Question (Theme: Personal Innovativeness)	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
I believe that any newly introduced system should be at the “cutting edge” of innovation and should surpass systems utilised by similar service providers.	23	40	58	33	32
Innovativeness is not as important to me as the system's ability to perform to identified work and task expectations.	18	27	40	52	49
The future of document management systems will be IT-based, and it is important that all innovative approaches make use of that above all.	16	30	35	60	45
The security risks associated with using innovative IT DMS options are a minor consideration and should not be the basis for decision whether or not a new system should be introduced.	31	45	50	34	26

There appears to be a stalemate from respondents with regard newly introduced systems being at the “cutting edge “of technology. The respondents (121, n=65 %) either strongly

disagreed, disagreed or took a position of neutrality juxtaposed with other respondents (123, n= 66%) agreeing, strongly agreeing or also taking a neutral stance. Innovativeness on the other presented a different scenario, the respondents (141, n= 76%) were in the affirmative, supporting the statement that “innovativeness “per say was not an important driver as opposed to a more fit for purpose approach. However, most respondents (140, n= 75%) supported the posited statement that future DMS systems will be IT based. With regard innovation versus security risks as antecedents to a system, there was partial consensus (126, n= 68%) identifying that security risks are be compromised for the sake of innovation.

5.29 SUMMATIVE OVERVIEW OF KEY FINDINGS

The study was primarily focussed on eliciting data from participants (namely the Mayor, Councillors; Municipality Exco and all other categories of strategic managers) employed by the eThekweni Municipality within document management systems. Reported results from a combination of data collection approaches including semi-structured exploratory individual interviews (n=45) with executive and strategic employees within the municipality; focus group discussions (n=2) and a quantitative survey (n=186), in which municipal executive employee participants provided experiential insights into the range of factors that they viewed as influencing technology acceptance of differing document management systems. A summative overview of the findings from the different phases highlights a number of influences that participants recognised as being important in the process of choosing an appropriate document management system.

The retrospective review of documents indicated a wide range of document management systems that included a combination of manual and e-based systems. The manual systems were primarily comprised of traditional people-based filing management options and traditional mailing systems. Within the documents reviewed, this option appeared to be the most commonly utilised document management system across the municipality and in many respects, it presented the standard against which other systems were measured. In addition to the manual document management system, there were a number of electronic data management systems that were identified within the documents

analysed. These electronica options included SharePoint, Drop box, Excel, Open Text, G-Drive, Cura-Software, Correspondence File Plan, and E-Mail Management

Following the initial document analysis, semi structured interviews were carried out with middle, senior and executive managers within the municipality, with primal focus on Overall, the semi-structured interviews were focussed on developing insights into the issues related to the above specified research questions but, more specifically, participants offered insights into issues such as the range of document management systems that were in use within their areas of work; their perceptions about the factors that differentiated quality with respect to document management systems; insights into their preferred DMS, supported by the reasons for their choices; an overview of the influences that they believed to be central in the determining the quality and usability of a DMS.

Background literature related to the adoption of new technologies consistently identified the perceived quality of the newly introduced innovation as a central deciding factor. This was pursued further within the semi structured interviews which required that middle managers, managers and executive managers provide their perspectives about what quality meant with regard to document management systems. Some participants were of the view that, for a system to be a quality system it needed to comply with what requirements. Most commonly cited was the view that, any document management system needed to be compliant with NARS (National Archives and Records Service Act, 1996) and relevant standards (ISO 15489). Within this viewpoint, the assertion was that, assessing the quality of any DMS needed would involve determining whether or not the DMS option was compliant with prevailing legislation and operational procedures. Interviews indicated that the issue of system security was noted as an important consideration that would influence perceptions about the quality of the system. Systems that have no declared security status were seen as being inferior because of the confidential nature of the content that the municipality would ordinarily be dealing with.

One of the most frequently cited issues related to staff's perceptions of their competence in using newly introduced systems. In particular, participants noted that the e-based DMS always required some level of up-skilling and from their experience, systems had often

been introduced without any specific user training. The tendency for “hit the ground running” approaches to introducing new DMS were often perceived as indicative of a poor DMS. The contributory nature of education toward readiness was offered in a number of differing ways by the participants, including views that, generic educational status was irrelevant to the uptake of new DMS but rather that, what mattered was the extent to which participants were educated about the particular change initiative that they were being exposed to. In determining what preferences participants had in relation to the selection of document management systems, interviewees offered a number of responses that were more related to the characteristics of preferred systems rather than actually identifying an exact named system. With regard to preferences, feedback highlighted those characteristics that they saw as deterrents to system choice, for example, systems that were deemed inaccessible, with poor security, limited storage and low upgrade-potential were avoided by all accounts by participants. The identification of such user-related features represented the most prevalent response-type amongst views expressed by interviewees and focus group discussants.

The lack of preference with respect to the differing document management systems was also associated with the fact that the introduction and any alternative document management process, carried with it, inherent change management challenges that were neither justified nor rationalised by those requiring the use of a new technology. In essence, the feedback drew attention to the existence of “a force field analysis” consideration that participants saw as missing from the practice of their management.

Decisions related to system choice, uptake and eventually use of specified document management systems were closely related to the quality and usability of the specified document management option. Several factors were identified as being determining influences on whether or not particular innovations were adopted and accepted. In general terms participant believed that Quality in the usability of the document management system with key to decisions being made and within this definition about what quality entailed were offered by a number of respondents. Firstly, some of the participants indicated that they perceived quality to be a reflection of how well the proposed document management system complied with legislation and standards.

Secondary to the issue of compliance with legislation standards, the feedback elicited indicated that perceptions about the quality of the DMS were associated with how cost-effective and easy to use any suggested system was assessed to be.

In summation, participants highlighted a number of technical specifications that they believed centrally defined what a quality system was, and these specifications were broadly related to ease of use, safety controls, range of functionalities and compliance with archives regulations. Similarly, participants conceptualised quality as a measure of how easy and convenient to them the system would be. Business considerations for example the cost of the system, in the associated costs of maintaining the system, issues related to the sustainability of the system when not specifically highlighted by participants with the exception of two individual interviewees whose roles were specifically in document management. They drew attention to the compatibility of the proposed new system with the old system and so did this as a key consideration before one could adopt or accept new technology.

The responses from the online survey were in agreement with the general themes that emerged from the individual interviews and the focus group discussions. Importantly, themes were statistically substantiated by virtue of the fact that the survey had statistically significant representation with 186 respondents. In summation, findings identified within the chapter offered a basis for the development of theory on what factors have noteworthy influence in document management system choice, as shall be explored in the next chapter.

5.30 SUMMARY

Chapter Five was devoted to the data presentation, analyses and interpretation. The presentation and analysis of emergent data addressed data from the desktop review, the semi-structured interviews; two focus group discussions and the online survey.

The presentation of findings compromised five distinct reporting aspects. The demography of study participants and respondents was offered, and this ensured that the findings of the study were contextualised to the specific populations that were studied.

The chapter then presented an overview of findings from the desktop review, followed by the semi-structured interviews, focus group discussions and the finally the online survey. The key purpose of the presentation structure was to support the process of answering the key study questions. The findings from each of the data collection phases are separated out with respect to the specific research questions that were articulated at the beginning of the study in order to facilitate meaningful contributions. The next chapter , chapter 6 , will discuss theory development.

CHAPTER SIX THEORY DEVELOPMENT

6.1. INTRODUCTION

Chapter five comprised a rigorous interrogation of the collected Data. The process involved, presentation, analysis and interpretation. Key outcomes and findings were elucidated and are the stepping-stones or ingredients towards fulfilling some of the pivotal objectives of the current study. Creswell and Plano (2011) identify the core characteristics of mixed methods research (among others) as being about ,collecting and analysing persuasively and rigorously both qualitative and quantitative data to answer a specified research question in ways that integrate or link the two forms of data concurrently merging them by having one build on the other sequentially or by embedding one within the other. Furthermore, this design is based on an assumption that the fundamental and core exercise of research are the findings or key discoveries which are specifically intended to be of use within the area of practice within the sphere of interest.

The analysis of the data presented in chapter five, revealed among other key findings, elements that could be used in a proposed blue print towards developing a total quality management and technology accepted model framework that best describes the characteristics of an effective document management system to be utilised by local government and similar entities. This outcome will attempt to satisfy one of the expected outputs articulated in the current study, namely a “best practice framework” that describes what the components of an effective document management process will entail.

Lewin’s (1945:132) dated but seminal observation was that “much is gained, (however,) if one realises that neither scientific nor practical results can be expected withoutadequate development of the theoretical aspect of the work”. Lewin further posits that the development of concepts and theories that combined “generality with the power of reaching the concrete”, represents a critically important aspect of managing change. The highlight of his argument in summation was the degree of complexity in the world, whilst emphasising the need for careful diagnosis. This, according to him, enables the application of theory and avoidance of the danger in becoming a servant to one sided interest. His insistence was that theory development must be linked closely with practice to be useful (Saunders, Gray, Tosey & Sadler-Smith, 2015).

Chapter six therefore, will be dedicated to very specific task of knowledge production and migrate towards developing a Theoretical Framework. This proposed framework will attempt to, not only satisfy the current study's aims and objectives but more importantly contribute to the broadening of the current knowledge base and creating "Scientific Knowledge" particularly in the Document Management Systems domain. The point of departure will be setting the platform for the Science, Scientific Research and Scientific Method elucidations and justification. Following this, consideration will be given to a basic excursion and explanation of the Ontology, Epistemology and Philosophical perspectives. The meaning and nature of theory followed by relationship between theory and research, and the building blocks of theory are then expounded. Virtues or attributes of good theory and allied to this a discussion with regard the strengths and weaknesses of theory building was espoused.

The "piece de resistance" will be the presentation of the framework and the specifications for an effective Document Management System for implementation within Municipalities and other related public service areas.

6.2. SCIENCE, SCIENTIFIC RESEARCH AND THE SCIENTIFIC METHOD

When people think of science and scientists', images of a person in a white lab coat engaged in experiments surrounded by bubbling flasks and cauldrons spring to mind. Mischievously also we think of the evil scientist flirting with concoctions to spread a toxic virus or hatching a plan to end the world. They could also be devising a plan to save the world in all fairness (Bordens & Abbot, 2011). Whether these images are as a result of books TV, or the movies, they realistically do not capture what science is or what scientists do.

Simply put, science is a set of methods used to collect information about a phenomenon in a particular area of interest and build a reliable base of knowledge about them. Glazinov (2012) offers that the process of gathering and evaluating proposed models against observables is Science. He further posits that the critical investigation purposed at discovering and interpreting facts is Scientific Research.

Bhattacharjee (2012) proposes that etymologically the word “Science “comes from the Latin word ‘Scientia”, meaning knowledge. His definition of science is a systematic and organized body of knowledge in any area of enquiry that is acquired using the “scientific method”. Bordens and Abbott (2011) iterates that science is also a means of thinking and viewing the world, and not just a mechanism of acquiring knowledge. Science can be categorized according to the purpose (Bhattacharjee 2012). The categorisations are Basic and Applied Sciences.

6.2.1. BASIC AND APPLIED SCIENCE

The stipulation by Bhattacharjee (2012) is that basic sciences are simply those that explain the most basic objects and forces, relationships between them, and particular laws governing them. They are also known as the Pure Sciences. Bordens and Abbot (2011) adds to the discussion by stating that the major core purpose of basic research is to gather general information about a phenomenon. Expanding on this they offer that Applied Science or research differs from Basic science or research, in that a researcher may still work from a theory when developing a hypothesis, the primary goal here being to generate information that can be aligned directly to a real-world problem.

Bhattacharjee (2012) furnishes that applied science is also called practical sciences, and further notes that for human development both basic and applied sciences are essential. A cautionary note by Bhattacharjee (2012) is that applied sciences are dependent upon basic sciences for progress. He goes on to further mention that inherent in applied sciences though is its practical value and the focus from corporates and industry is concentrated largely on this approach. Both basic and applied sciences however are studied by Universities.

Glazinov (2012) further provides that classification and subdivisions of scientific research can be made aligned to purpose or specifically to their academic application disciplines. Basic and applied research for all intents and purposes have been dealt with, however classifications such as Exploratory Research, Constructive Research, Empirical Research, Primary and Secondary Research demands noting.

“Research in general follows a structural process where the fundamental goal of the research process is to develop and produce new knowledge” (Glazinov, 2012). Basic explanations will follow with regard the definitions of these three forms. He also talks about Exploratory research as, which structures and identifies new problems. Constructive research is focussed on developing solutions to problems. The method that tests feasibility of a solution underpinned by utilizing empirical process, is termed Empirical Research.

Bhattacharjee (2012) concludes by stating that the purpose of Science is the formulation, development and creation of Scientific Knowledge.

6.2.2 SCIENTIFIC RESEARCH/ KNOWLEDGE

The term “Research” conjures different meanings and connotations to different people. This seemingly innocuous question: “What is Research” will elicit a myriad of responses and explanations. Marketing companies will conduct consumer research, or a viability test for a new service or product and so forth (Bhattacharjee 2012). They may even contemplate testing a new market or a sector of the population with regard launching new products or services. Students will trawl the internet to complete assignments and term projects and so forth. However, the term Scientific Research cannot be associated with these forms of research.

It is noted that Bhattacharjee (2012) emphasises that Scientific Research must align with these qualities: (1) contributes to a body of science, and (2) follows the scientific method diligently. Caparlar and Donmez (2016) contributes to the discussion by stating that Scientific Research, is research that is planned, and conducted for the purpose of contributing towards the body of scientific knowledge. This must be done by the systematic collection, interpretation and evaluation of data.

The goal of scientific research is to postulate theories and discover laws (Bhattacharjee, 2012). Put simply it is to build and create scientific knowledge further contends that theories and observations are interrelated and cannot exist in isolation or without each other. Scientific laws and theories are outcomes or crystallized out of the process of logic

and evidence, and Bhattacharjee (2012) concludes by articulating that, these are the only two pillars underpinning Scientific Knowledge.

Further to the acceptance that the two building blocks of science, theories and observations, scientific research functions similarly at two levels. The levels are a theoretical level and an empirical level Bhattacharjee (2012) posits that developing abstract concepts about a natural or social phenomenon and relationships between these concepts (i.e. build theories) is concerned with the theoretical platform. On the other hand, testing the theoretical concepts and relationships to see how well they reflect our observations of reality, with the ultimate goal of improving and building theories, is the Empirical level.

He expands his discussion in stating that the maturation of science lends to, over time, the theory becoming more refined. This continuous back and forth movement between theory and observation characterises Scientific Research. The essential components of scientific research are both theory and observations, but he cautions however, that relying solely on observations for making inferences and side-tracking theory does not align to valid scientific research.

Concluding he professes that the formulation or creation of scientific knowledge is the purpose and aim of Science. He purports that the generalized body of laws and theories to explain phenomenon or behaviour of interest, gained and developed utilising and embracing the scientific method is termed Scientific Knowledge.

Another critical aspect of Scientific research according to Gabriel (2013) is the link between theory and data, they not only inform the approaches to research, but provide the proverbial ladder that carries and assists in expediting the research. According to Malhotra (2017) these strategies include Inductive, Deductive, retrodictive and abductive research strategies.

6.2.3 RESEARCH STRATEGIES TO THEORY DEVELOPMENT

Malhotra (2017) posits that establishing limited generalisations about the distribution of, and patterns of association amongst observed, or measured characteristics of individuals and social phenomenon is the fundamental aim of the Inductive Research Strategy.

Generalisations are extracted from observations of specific events via the Inductive Approach. He further explains that instead of preconceived notions about the workings of the world, Inductive research presupposes that explanations, should be founded on facts extracted from pure, dispassionate and natural observation. In doing so, he continues, to a passively receptive mind nature will reveal itself.

Blackstone (2012) adds to the subject in furnishing that data collection relevant to the researcher's topic of interest will be initiated as the commencing process. After sufficient quantity of data is collected, the researcher will pause, and try and get a holistic perspective or viewpoint of the collected data. Patterns are sought with the intention of building a theory that could possibly best describe the patterns. She summarises by forwarding that in Inductive research, the journey starts with collected data and transfers to theory, or from the specific to the general.

Figure 6.1 outlines the process in Inductive approach to Research.

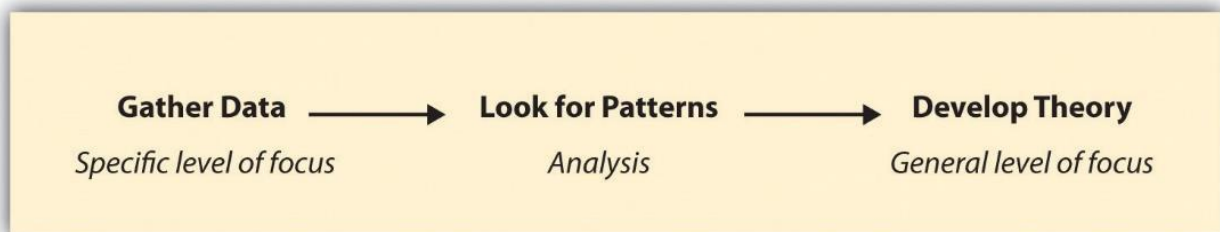


Figure 6.1 Inductive Approach to Research (Source: Amy Blackstone, 2014)

According to Logical reasoning in humanitarian analysis (n.a:11) offers that generalisations are an argument that proceeds from the knowledge of a selected sample to some claim about the whole group. Members of the sample possess a particular characteristic, the argument is that therefore, all members of that group possess that same characteristic.

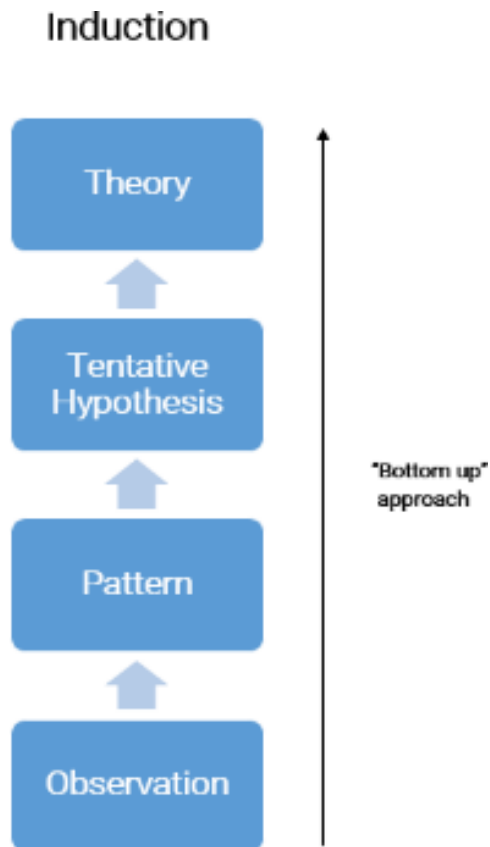


Figure 6. 2 The Inductive Approach to Research (Bottom Up) (Source: AmyBlackstone, 2014)

Malhotra (2017) profess that an Inductive arguments conclusion characterize that it amplifies beyond the assertion it is platformed and thus expands knowledge by traversing the boundaries of real experiences. He calls the inductive method also the bottom up approach.

Figure 6.3 illustrates this Bottom up “Hill Climbing” Process.

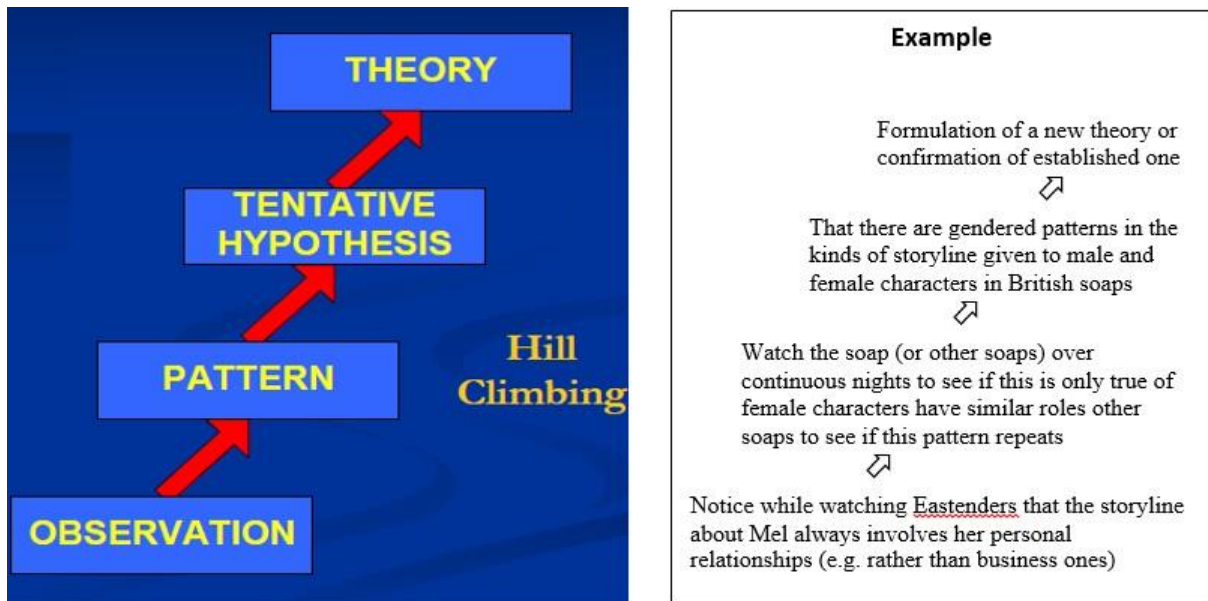


Figure 6. 3 The Inductive Approach to Research (Hill Climbing) (Source: Malhotra,2017)

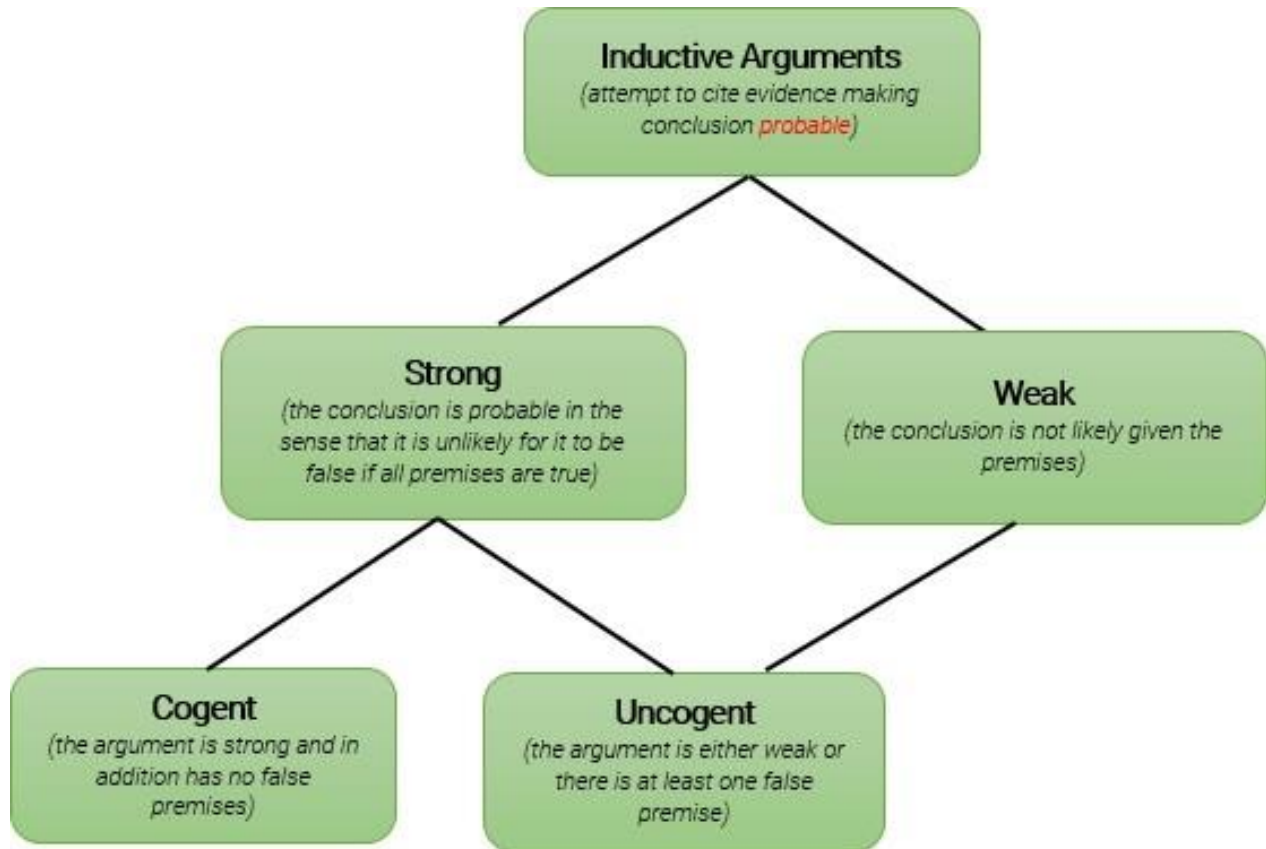


Figure 6. 4 Inductive Approach to Research (Source: Amy Blackstone, 2014)

Miessler (2018) presents the biggest difference as point of distinction between Inductive and Deductive research. The distinction of difference being that deductive reasoning commences with a statement or hypothesis and is then analysed and examined for validation. Inductive research on the other hand is initiated by observation and reverses toward generalisations and theories. An example alluded to by Miessler (2018) is as follow: If $A = B$, and $B = C$ then $A = C$, alternatively if all squares are rectangles and all rectangles have four sides, so all squares have four sides.

Bhattacharjee (2012) put it simply by alluding to the goal of deductive research and that is the, fundamental objective is to evaluate, and test patterns known from theory utilising new empirical data. Hence, concluding that theory building research is called Inductive research and theory testing is called deductive research.

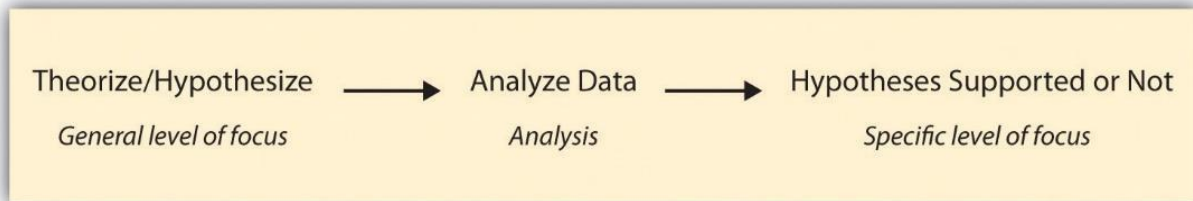


Figure 6. 5 Deductive Approach to Research (Source: Anmol Bhattacharjee, 2008)

Malhotra (2012) discusses that the deductive argument transfers from the premise to an end that is a singular statement. The hierarchy is from theoretical to observational, and abstract to concrete. This is sometimes informally termed “Top -Down” approach.

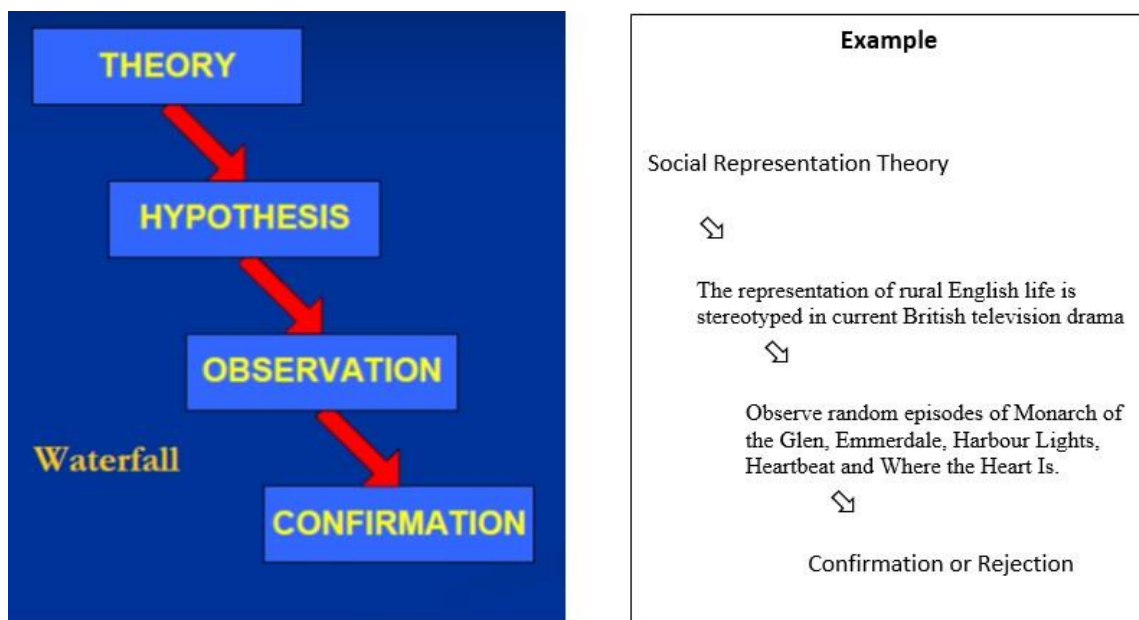


Figure 6.6 Depiction of Conclusion (Source: Malhotra, 2017)

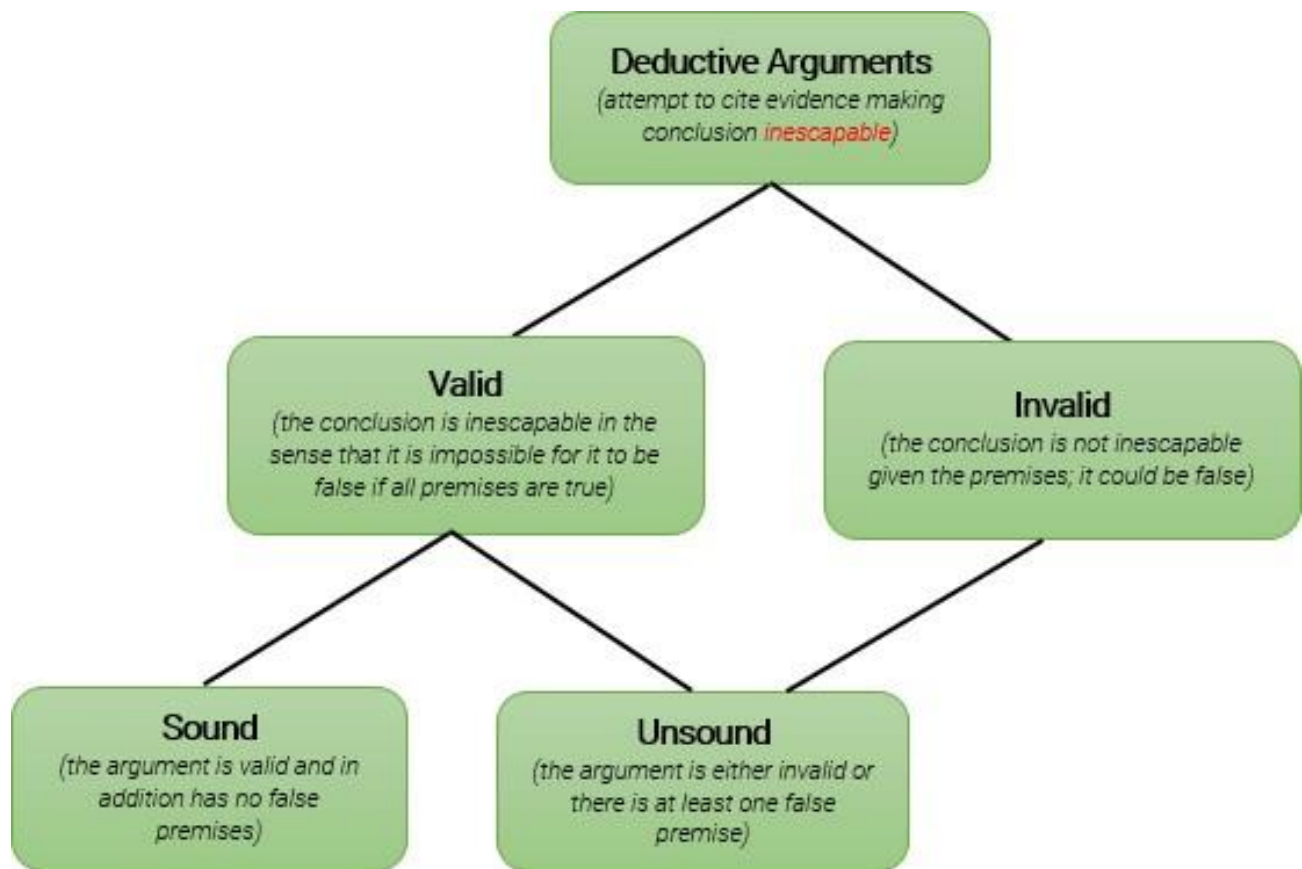


Figure 6.7 Deductive Approach to Research (Source: Amy Blackstone,2014)

6.2.4 THE SCIENTIFIC METHOD

Constant referrals to the term Science as knowledge, developed through a Scientific Method is prevalent throughout the Chapter, at this juncture the definition and explanation of this term (Scientific Method) is required.

Bhattacharjee (2012) offers that Scientific Method, is a set of standardized techniques for the facilitation and development of Scientific knowledge, in such a manner that validate observations, interpretations of results and generalising of those results. He expands on this concept by iterating that inherent in the Scientific Method are four key characteristics.

They are:

- Logical - Scientific inferences must be platformed in logical principles of reasoning
- Confirmable - Derived inferences must be aligned with observed evidence
- Repeatable - The Scientific study should be replicated or repeated by other Scientific researchers. The salient or take away point, here being that similar or identical results must be obtained
- Scrutinizable - Peer review and critical examination by other scientists or researchers of the process and procedures must withstand their close scrutiny interrogation and evaluation.

According to Flom (2016), in his article summarizes the fundamental attributes of the Scientific Method as follow:

- Empirical Observation -The Scientific Method is empirical. It relies on direct observation
- Replicable Experiments-If another person duplicates the study, the similar or identical results will be attained
- Provisional Results -Results are provisional and are open to scrutiny and debate.
- Systematic Observation -Strictly speaking, the Scientific Method is carefully planned research and rather specific in nature. It is not haphazard in any way.
- Objective Approach-facts about the world are relied upon -the Scientific Method is objective.

Bhattacharjee (2012) cautions however, that cognisance must be taken of the fact that Scientific Method functions primarily at the empirical realm or sphere of research

6.3. A BRIEF GUIDE TO ONTOLOGY, EPISTEMOLOGY AND PHILOSOPHICAL PERSPECTIVES

A very brief theoretical excursion will be traversed articulating the pivotal and vital knowledge contributions advanced, culminating in the confirmation that ontology and epistemology underpins theory building in research.

The fundamental objective that drives and fuels every researcher's sojourn into the wilderness of the unknowns, is to attempt to establish the truth fact about a given societal challenge or phenomena. Questions that perplex and persist, are at the forefront of the researchers thinking. How can understanding philosophy improve our research? The enquiry of what frames our research, what influences our choices? and do our personal thoughts and belief systems as researchers shape our research designs, analysis, outcomes and interpretations? Questions that have plagued the enquiring minds for eons (Moon & Blackman 2017).

These are the very cornerstone ingredient's and are extremely crucial for social science research. They also contribute to, and are an almost mandated blueprint guide, in helping in the production of effective social science. The persistent and unyielding pursuit of knowledge creation and development is undoubtedly the catalyst for engaging and embracing research or should be.

Moon and Blackman (2017) postulate that theoretical thinking, a method of cognition, perspective and self-awareness, are the generic principles endorsed by philosophy. They further articulate that a combination of the above principles is used to acquire knowledge of reality and to design, conduct, analyse and interpret research and its outcomes. Knowledge based on a tenacity-superstitious knowledge developed over time due to cultural belief systems and traditions, expert based knowledge, knowledge by reasoning, which are underpinned by scientific measures, are all sources of different knowledge platforms. However according to Solomon, Eke and Juliet (2018) scientific knowledge is regarded as superior and more reliable, substantiating that this knowledge was undertaken and extracted via a systematic, organized and controlled approach and process. The assertion therefore is that research is a scientific knowledge creation process.

Put simply then, research is a very structured well thought out, purposeful, critical investigation, governed by principles and procedures to find some fact, or meaning and or solution to particular problems specifically in the business sphere or space. Solomon et al. (2018) cautions however that the embryonic or elemental principles in developing and creating knowledge must rest on or include the foundational building blocks of Ontological and Epistemological philosophies.

So, what then is this seemingly arcane, commonly daunting terms encountered within the realms of academia?

As a means of distinction and definition, let's look at the questions surrounding Ontology. Questions that arise are "What is existence?" and "what is the nature of existence?" Epistemology on the other hand enquires "what do you know?" and "how do you know it?" Patel (2015) further posits that Ontology is characterized by "What is reality?" while epistemology epitomizes the "How do we know something?"

Keser and Köksal (2017) defines Ontology as the "nature of reality" and or how researchers approach reality and the determination of that reality existing in the universe. Further they forward a definition of Epistemology as the nature of knowledge, in simple terms, summarising that Ontology is the study of realism and epistemology on the other hand is the study of knowledge. Scotland (2012) posits that in trying to bring clarity to the epistemological philosophy, it is concerned with the nature and forms of knowledge. Further presenting that the emphasis and concerns with regard epistemological assumptions, are with how knowledge can be created, acquired and communicated.

Solomon et al. (2018) continues the discussion by furnishing that Ontology is a belief system that reflects the manner a person perceives what represent a fact. Put in other words, the central question embracing Ontology is whether social entities need to be perceived as objective or subjective. Patel (2015) postulates that Ontology and Epistemology enables a comprehensive outlook of the manner knowledge is viewed and highlights the relationship of ourselves to the knowledge.

Scotland (2012) contributes by alluding that every paradigm is platformed upon its own ontological and epistemological assumptions. He states that since all assumptions are

conjecture, the underpinnings of each paradigm can never be empirically proven or disproven. The argument here, is that inherent in different paradigms contain differing ontological and epistemological perspectives concluding that differing assumptions of reality and knowledge will underpin that particular research process or approach.

The three most common paradigms according to Patel (2015) are:

- a) Positivists,
- b) Constructivists and
- c) Pragmatists

The table below expounds and illustrates a detailed overview of the above paradigms

Table 6. 1 Overview of Paradigms (Source: Salma Patel, 2015)

Paradigm	Ontology <i>What is reality?</i>	Epistemology <i>How can I know reality?</i>	Theoretical Perspective <i>Which approach do you use to know something?</i>	Methodology <i>How do you go about finding out?</i>	Method <i>What techniques do you use to find out?</i>
Positivism	There is a single reality or truth (more realist).	Reality can be measured and hence the focus is on reliable and valid tools to obtain that.	Positivism Post-positivism	Experimental research Survey research	Usually quantitative, could include: Sampling Measurement and scaling Statistical analysis Questionnaire Focus group Interview
Constructivist / Interpretive	There is no single reality or truth. Reality is created by individuals in groups (less realist).	Therefore, reality needs to be interpreted. It is used to discover the underlying meaning of events and activities.	Interpretivism (reality needs to be interpreted) <ul style="list-style-type: none"> • Phenomenology • Symbolic interactionism • Hermeneutics Critical Inquiry Feminism	Ethnography Grounded Theory Phenomenological research Heuristic inquiry Action Research Discourse Analysis Feminist Standpoint research etc	Usually qualitative, could include: Qualitative interview Observation Participant Non participant Case study Life history Narrative Theme identification etc
Pragmatism	Reality is constantly renegotiated, debated, interpreted in light of its usefulness in new unpredictable situations.	The best method is one that solves problems. Finding out is the means, change is the underlying aim.	Deweyan pragmatism <i>Research through design</i>	Mixed methods Design-based research Action research	Combination of any of the above and more, such as data mining expert review, usability testing, physical prototype
Subjectivism	Reality is what we perceive to be real	All knowledge is purely a matter of perspective.	Postmodernism Structuralism Post-structuralism	Discourse theory Archaeology Genealogy Deconstruction etc.	Autoethnography Semiotics Literary analysis Pastiche Intertextuality etc.
Critical	Realities are socially constructed entities that are under constant internal influence.	Reality and knowledge is both socially constructed and influenced by power relations from within society	Marxism Queer theory feminism	critical discourse analysis, critical ethnography action research ideology critique	Ideological review Civil actions open-ended interviews, focus groups, open-ended questionnaires, open-ended observations, and journals.

Arising from ontology (what exists for people to know about) and epistemology (how knowledge is created and what is possible to know) are perspectives, a system of

generalized views of the world which develop platforms of belief's that mould and guide action (Moon & Blackman 2017).

Continuing, the authors emphasise that, the philosophical perspectives when made explicit, the assumptions alluded to by the researchers with regard their research, are elucidated. This leads to decisions that inform and impact, purpose, design, methodology, methods of research, data analysis and interpretation. Core to the very basic level, the fundamental choice of what to study in the sciences, imposes one's value on one's subject. Concluding their standpoint, is the revelation that taking cognizance of and understanding the philosophical platforms of sciences is vital in safeguarding that outcomes of research which must be significantly and relevantly espoused.

A higher-level theory is what every research study is informed by Glesne (2011). Further stipulating that occasionally some researchers may not even be aware of these theories due to their embedded assumption about the nature of reality and knowledge.

Van de Ven (2016) asserts that the mere fact that majority of us are practitioners rather than philosophers of science due to the fact that we are more occupied with engaging in research rather than talking about it. A cautionary note here, however, is that any form of research, be it business or pure science, underpinning this platform is a philosophy of science that inform us of the nature of the phenomena examined (Ontology) and the methods for understanding (Epistemology).

The architectural representation of Epistemological and Ontological dispositions illuminates the researcher's perspective of how they view the world and the production of knowledge (Collins & Stockton 2018).

This very brief journey above showcased that the driving force behind undertaking research is the pursuit for knowledge creation and development. The concepts of Ontology and Epistemology philosophies were clarified with the depiction of nature and reality whilst highlighting the existing relationship between researcher and philosopher.

The paper by Solomon et al. (2018) concluded that Ontological and Epistemological philosophies underpin theory building and are in fact axioms that complement each other,

rather than detract, and in so doing bringing a better understanding whilst apprehending the true essence of business research.

In theory building as stated by Gay and Weaver (2011), the diversities, complexity and criteria associated with theory, made researchers to typified theories into classes, to describe and define their purpose, functions, boundaries and goals. Let us then attempt to define theory.

6.4. THE DEFINITION AND NATURE OF THEORY (AN EPISTEMOLOGICAL VIEW)

The provision of an explanation of a problem comes from the systematic nature of theory. It describes the distinguishing innovative features of a phenomenon and forms the basis to facilitate predictive utility. Put simply, research without theory has no foundation and conversely theory depends on research to provide proof of the theory's correctness (Udo-Akang 2012).

Typologies and classification systems are utilised by many researchers to describe the type of theories. These are done in the context of purpose, functions, boundaries and goals (Gay & Weaver, 2011). When examining the array of academic literature on the definition of Theory, there exist a plethora of varied opinions, definitions and criteria. Upon examination with regard the myriad of presented answers for the definition of Theory, the stark highlights are the conflicting views and lack of agreement and consensus with regard the definition. The debate by researchers on the definition of Theory is widespread and well documented. Gelso (2006) offers the following definition using eight constructs: a) descriptive ability, b) explanatory power) heuristic value, d) testability, e) integration, f) parsimony, g) clarity, h) comprehensiveness, and i) delimitation. The author based the above constructs on the premise that theory generates research and research generates and further refines theory.

Bhattacharjee (2012) states that as far as theological, philosophical or other explanations, scientific theories are different. Scientific theories can be empirically tested using scientific methods. Explanations can be Idiographic or Nomothetic.

Idiographic are those explanations that are based on a single situation or event. As an example, you perform poorly in a Mathematics test, but attribute that to forgetting the exam date or getting caught in traffic. This may be rather accurate, detailed and valid but may not be applicable to other similar situations or circumstances even if it involves the same person. It is therefore not generalisable.

Nomothetic explanations on the other hand perseveres to explain a group or category of events or situations, as opposed to a single event or situation. As an example, students performed poorly in the examinations owing to the fact they suffer from nervousness or some medical condition. Nomothetic explanations are engineered to be generalizable across situations, events or people. Notwithstanding this, nomothetic explanations tend to be incomplete, less precise and less detailed. They however explain frugally and economically utilising only a few explanatory variables (Bhattacharjee 2012).

Saunders et al., asserts that within the Business and Management space, the terms “concept”, “model”, “theory” and “framework” are on occasions actually used interchangeably. Suffice to say that there is prevalent a range of confusing opinions that may lead to misunderstanding, however for the sake of this study the term Theory in general is referred to as a systematic body of knowledge, grounded in empirical evidence, which can be used for explanatory and predictive purposes. Lauffer (2011) proclaims that a theory is responsible for bringing together related facts and concepts that describes and interprets.

Sunday (2014) puts forward the view that, theory is a model or framework for observation and understanding. It shapes both what we see and how we see it. The author continues by explaining that theory allows the researcher to make links between the abstract and the concrete, the theoretical and the empirical, thought statement and observational statement.

Many theorists and researchers actually go as far as defining what Theory is not. A renowned psychologist Donald Hebb, purports that “a good theory is one that holds together long enough to get you to a better theory”. Mintzberg (2014) boldly states that all theories are false, he explains by saying that theory are after all just words and symbols

on pieces of paper. It is about the reality they purport to describe; they are not that reality and subsequently they simplify it. He further suggests that we choose our theories according to its usefulness and not how true they are. The argument ends by encouraging researchers, scholars' teachers to stimulate thinking by offering alternate theories and multiple points of view of the same phenomenon.

We need more and different kinds of theories, the more the better. The resultant must be more enquiring, pondering, wondering readers and students. The aim, he stresses is the quest for knowledge, for truth. The definitive and take away from the arguments in summary are that theories are dynamic and are not static. They will be affected by new emerging evidence and observation, which must be capable of being verified or contradicted. Chinn and Kramer (2014) succinctly forward that theories, frameworks and models are not discovered but they are in general created and invented. The crafting or building of theories is an important and integral component for advancing knowledge, suffice to say it is a highly challenging task. Shepherd & Suddaby, (2014) The overarching criteria must be based on the premise that researchers and scholars maintain academic rigour while ensuring practical relevance. Lukenchuk and Ulysse (2013) enquires "what can we really know about the world around us" it is an age-old conundrum.

The more we learn about the world, the more we realize there exists much more truths out there. An ancient Chinese saying succinctly captures the essence of these "Truths", which are both tempting and elusive as, "To be uncertain is uncomfortable, but to be certain is ridiculous (Boyd 2012). The theory of relativity, quantum mechanics, discovery of DNA, advancements in Science, biology, mathematics, philosophy and so forth have irrevocably metamorphized our thinking about not only the universe, but ourselves as well, in terms of certainty of knowledge. We had to, not only give up our traditional thinking, for example with regard the reality of the particle picture of electrons because of quantum mechanics, but also the nature of reality itself (Lukenchuk and Ulysse 2013:56).

What will the 21st century hold? Lukenchuk and Ulysse (2013) allude that it will perhaps be "much an age of philosophy as an age of science".

6.5. RELATIONSHIP BETWEEN THEORY AND RESEARCH

Corley and Gioia (2011) forward that “Theory is the currency of our scholarly realm”. As difficult as it is to find consensus on the definition of the term Theory”, so too is the lack of consensus with regard the contribution of research to theory or how research can inform theory. However, the opening statement is something that most researchers and academics agree upon. Gay and Weaver (2011) suggest that the core or fundamental premise is that original research should contribute to the body of knowledge. However, the contentious area revolves around what exactly constitutes “contribution”.

Corley and Gioia (2011) summarise that literature indicates that research contributes to theory bi- dimensionally 1) Originality and 2) Utility. On one side we find theoretical design and the other pragmatic design (Smith, Bekker & Cheater 2011). They further position that the tension between the two is ubiquitous.

Corley and Gioia (2011) summarize that the implications of the originality and Utility dimensions are that theoretical contributions are incumbent on the ability of the scholars to produce original thinking. It must also be insightful and useful in its practicality and application. They further state that their perspectives of the two dimensions is that they complement and work together to deliver and produce different levels of theoretical contributions.

Thomas (2017) in his narrative contributes that research informs theory in a myriad of ways. Observations from research can create theory and also refute or validate a theory. The author cautions however that research not only supports or refutes theory but also could be utilised as a vehicle to provide extended insights into the elements of theory, thereby providing the platform for further remodelling refinement of the theory.

Gay and Weaver (2011) purport that there a plethora of ways that research can contribute to theory. They highlight three dimensions, however, two of the dimensions, originality and utility were elucidated above. In briefly explicating these two dimensions the emphasis is that research can contribute to the explanatory power of theory. This could be a unique revelation, to the point of paradigm changing. The authors caution however, that the contributions are more incremental towards theory development.

Corley and Gioia (2011) participate by describing the second theory contributory dimension of utility as something that is perceived to advance and enhance its operationalisation testing potential. Put simply practical utility is viewed as arising when theory can be useful to practicing managers and other organizational challenges. Gay and Weaver (2011) then allude to the third dimension as something that has far more importance for the function of theory, and that is creating a platform for a “best practice” scenario.

We are reminded of Lewin’s (1951) memorable quote, so simple, but yet so elegant in asserting that “Nothing is quite so practical as a good theory”. The understanding being that when theory is grounded in past experiences and empirical research, the quality of “good” is extricated. This according to Gay and Weaver (2011) then becomes the benchmark or standard to establishing what should be considered as “best practice”.

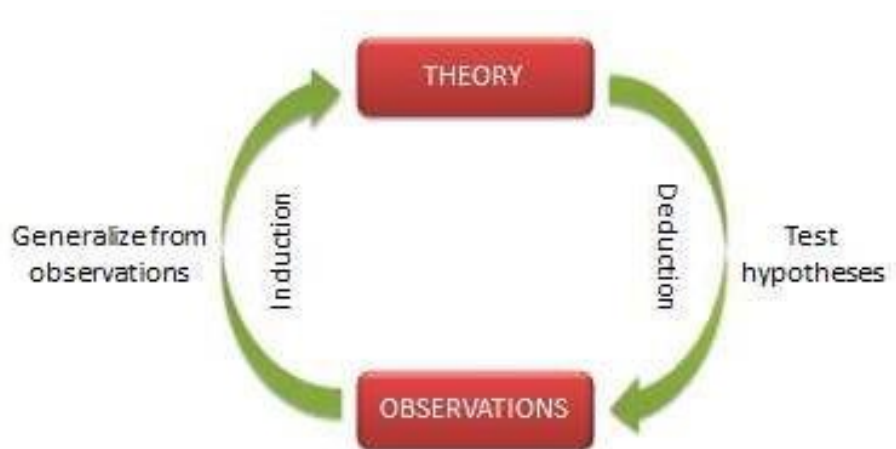


Figure 6. 8 Research Circle (Source Adapted from: Gay and Weaver, 2011)

Gay and Weaver (2011) culminates their contribution in stipulating that theory has no purpose if it cannot bridge the research practice gap. They assert that it must have practical application to the real world. As an example, they allude to Einstein’s Theory of

General Relativity and the fact that although not immediately empirically validated, the resultants were various practical applications in the space of quantum mechanics and particle physics. Simply put, theory development must be connected closely with practice and usefulness, as eloquently emphasised by Lewin.

In conclusion, Thomas (2017) provide that theory and research are interrelated, Academics and researchers may lack consensus around the exact relationship between the two, however this interrelationship between research and theory effectively are the catalyst in providing an enabling platform in producing new knowledge.

6.6. BUILDING BLOCKS OF THEORY

Bhattacharjee (2012) cites in his article that there are essentially four building blocks of theory. They are Constructs, Propositions, Logic and Boundary conditions / assumptions. Constructs capture the “What” of theories. “How” is characterised by the propositions, the “Why” is embraced by Logic and the “Who, When and Where” are epitomised by the boundary conditions/assumptions.

Constructs as a means of explanation, is the word for concepts with no physical referent for example, learning, freedom, and a person’s weight. The takeaway here is that constructs used for scientific research must have definitions that are clear and precise. A clear distinction must be prevalent in understanding what it is or is not. Variables are measurables symbolic of abstract constructs. They also may be autonomous, subordinate, interviewing or directing (Udo-Akang 2012). This could be a person intelligence quotient which measures that person’s intelligence. Put simply a construct is therefore an abstract concept that is specifically created to help understand a particular phenomenon (Bhattacharjee 2012).

Concepts on the other hand (Blackstone 2012) is the idea of some notion that we conjure up in our minds when we allude to some grouping of related observations, example masculinity. She cautions however that the fact that we have definitions for abstract concepts does not necessarily mean that the concept is tangible or concrete.

Bhattacharjee (2012) describes concepts as a representation symbolically of an actual thing for example, table, chair tree and so forth. Simply explained, its characteristics are associated with objects, events or people. Daily we use concepts knowingly or unknowingly in our life's, through our engagements or conversations.

There are progressive rungs of abstraction with regard concepts. A person's weight for example is precise and objective, a measure is in place to describe this, whilst a person's personality may be that much more difficult to describe (Bhattacharjee 2012). Concepts help us grasp or make sense of the real-world phenomenon and to explain logical connections between them. They are likened to building blocks. Propositions are the connections or relations between constructs platformed on deductive logic. These are positioned at the theoretical level or the explanatory frame.

Thirdly, logic is the next building block. A base is provided for justifying the propositions. Logic is like the adhesive that brings together the theoretical constructs and establishes the relevance and meaning to the relationships between the constructs. At the very core of theory lies the explanation which is representative of logic (Bhattacharjee 2012).

The last building block is the boundary conditions/assumptions. All theories are inhibited or limited by assumptions with regard value, time, and space and boundary conditions. These govern where theory can or cannot be applied (Bhattacharjee 2012). The challenge here is that theorists rarely state their implied or inferred assumptions transparently, which results in frequent misapplications of theories to problem in research.

6.7. ATTRIBUTES OF A GOOD THEORY

Theories are often simplified and will often offer partial or incomplete explanations of a particular complex social reality (Research Methods for Social Sciences -Chapter 4). The challenge then is, what are the attributes of a Good Theory?

The following are some of the criteria for "Good Theory".

- Logical Consistency. The pertinent enquiry or question here is, are the theoretical constructs, proposition, boundary conditions and assumptions aligned logically with each other. If not, quite simply the theory is either flawed or inferior.
- Explanatory Power. To what extent does a stipulated theory predict or explain reality.
- Falsifiability-Simply put, for theories to be valid they must be falsifiable. In other words, theories cannot be theories unless they can be empirically testable.
- Parsimony. The fewer the variables utilised to explain a phenomenon the better. Parsimony also refers to the degree of freedom in a given theory.

Naor, Bernardes and Coman (2013) offers that a 'good theory' is limited and fairly precise in that it indicates effectively how and why relationships are logically connected. There are four major components of theory:

1. Definitions.
2. Domain.
3. Relationships.
4. Predictive claims.

The above components satisfy the questions of who, what, when where, how, why, could, should and would. Naor et al. (2013) suffice to say that these four formative theory components are vital and necessary for theory building.

Keas (2017) explains that there at least twelve major virtues that characterize good theories. These twelve virtues are best categorised into four classes: evidential, coherently, aesthetic and diachronic. The theoretical virtue is systematised and in so doing this mode filters each virtue and proposes how they might have a co-ordinated and collective role in theory creation and evaluation across the disciplines. This method also allows for discipline specific modifications.

Theoretical virtues are the very characteristics or traits of a theory that exhibits that it is probably true or worth adopting and accepting. Throughout this chapter we have witnessed the active and widespread deliberations by researchers and philosophers with regard the identification, characterisation, classification and epistemic positing of theory

virtues, however mostly all scholars, agree and consent that these following stipulated virtues help us to ascertain which rival theory is the most suitable explanation.

The most commonly widespread accepted theories, across the academic disciplines usually showcase or displays many of the listed theoretical virtues to be expounded below.

6.7.1 EVIDENTIAL VIRTUES

- Evidential accuracy – A Theory(T) fits the empirical evidence well (regardless of causal claim).
- Causal adequacy -T's causal factors plausibly produce the effects(evidence) in need of explanation.
- Explanatory depth-T excels in causal history depth or other depth measures such as the range of counterfactual questions that is law-like generalizations answer regarding the item being explained.

6.7.2 COHERENTIAL VIRTUES

- Internal consistency -T's components are not contradictory.
- Internal coherence -T's components are co-ordinated into an intuitively plausible whole. T lacks ad-hoc hypothesis -theoretical components merely tacked or to solve isolated problems.
- Universal coherence: T sits well with (or is not obviously contrary to) other warranted beliefs.

6.7.3 AESTHETIC VIRTUES

- Beauty: T evokes aesthetic pleasure in properly functioning and sufficiently informed persons.
- Simplicity: T explains the same facts as rivals, but with less theoretical content.
- Unification: T explains more kinds of facts than rivals with the same amount of

theoretical content.

6.7.4 DIACHRONIC VIRTUES

- Durability: T has survived testing by successful prediction or plausible accommodation of new data.
- Fruitfulness: T has generated additional discovery by means such as successful novel prediction, unification, 2 and non-ad hoc theoretical elaboration.
- Applicability: T has guided strategic action or control, such as in science-based technology.

In summarising, the evidential virtues indicate different facets of how well a theory accounts for the entities, events and regularities in the world. Coherential virtues are how well the theoretical components fit together. The Aesthetic theoretical virtues possess an aesthetic shape that is quite different from the logical -conceptual fit of the coherential virtues.

Profoundly and eloquently forwarded by McMullin (2014) and that which epitomises the current subject is the following ‘the most important discovery in the history of science to date has been the manner in which that activity itself should be carried on and what expectation should guide it. The expectations I have called theory virtues have helped to shape it well’.

6.8. CRITERIA OF EVALUATION

Cramer (2013), forwards six criteria of evaluation. These could function as a measure of accuracy and usefulness of a scientific theory.

- Comprehensiveness - comprehensive theories encompass and embrace a greater scope or range of explanation for various phenomenon.
- Precision and Testability - This criterion is one of the most stringent and rigorous. It demands that good theory constructs are premised on a platformed of clear definition, tightly interrelated and readily open to reliable and valid measurement through falsifiable hypothesis.

- Parsimony - A theory trimmed of unnecessary excess. Put simply, all things being equal, the simpler or more parsimonious theory is likely to be more apt.
- Empirical Validity – Surpassing the descriptive and explanatory scope of a theory, the confidence in a theory's viability is reinforced by its ability to accurately predict and control phenomenon.
- Heuristic Value – encompasses the ability to generate unique thoughts, perspectives and directions in other fields.
- Applied Value – Simple put, it is the extent to which Theory's applied value offers effective solutions to life's challenges and problems.

The pertinent comment is that all criteria must be seen as complementing each other and working in partnership.

Ryckman (2013), offers that the above six criteria, will certainly differ in their importance, emphasis and evaluation. They are therefore divided into three classes: the least stringent criteria, being Comprehensiveness and Applied Value. More stringent are found in a theory's Parsimony and Heuristic Value and the ultimate test of a theory is Precise and Valid measurement coupled with supportive evidence.

6.9. STRENGTHS AND LIMITATIONS OF THEORY BUILDING

6.9.1. LIMITATIONS

One of the limitations of theories, is that it may not always present or provide sufficient elucidations of the phenomenon of interest possibly relating to the simplified explanations of theory. This may be based on a constrained set of constructs and relationships. The simplicity in design of theories added to the parsimonious explanations juxtaposed against the significantly more complex reality, may pose another limitation. Theories may also inhibit researchers or scholars' range of viewpoints resulting in pertinent and salient concepts being overlooked that are not defined by theory (Bhattacharjee 2012).

6.9.2. STRENGTHS

Udo-Akang (2012) states that theories are deductible to observables and also used as instruments to do things in the world. They are statements about things that really exist.

Corley and Gioia (2011:12) postulates that no academic study or research can be undertaken without theory. Most scholars agree (as mention in early parts of chapter) that “Theory is the currency of scholarly research”.

Udo-Akang (2012) furnishes that a theory presents a framework for analysis, facilitates the efficient development of an academic field and is required for the applicability to practical real-world problems. The fuel that is needed to propel and advance research and practice is theory.

Vogel (2010) contributes by confirming that apart from Social sciences, theory creates and facilitates a practical and revealing connection in chemistry, physics, medicine, biology and other life sciences. The resultant is the fact that it enables useful practice, discovery, explanations, and predictions.

The bottom line is that theory generates research and research generates theory.

6.10 PROPOSED SPECIFICATION FRAMEWORK FOR CURRENT STUDY

6.10.1 STRATEGIC PRIORITIES THAT RELATE TO THE IDENTIFICATION AND UTILISATION OF SPECIFIC DOCUMENT MANAGEMENT OPTIONS

The rapidly changing business landscape including government and non-profit sector demanded that leaders of these organizations adapt and adjust accordingly, not only for a competitive edge but for business survival.

The South African government face a multitude of challenges in delivering services. The municipality is seen as the ‘delivery arm’ of the government (SALGA 2014) and as such mandated to improve the living conditions of its citizenry. Service delivery protests continue unabated and has become an almost weekly occurrence (Mawela, Ochara & Twinomurinz 2017). These service protests are primarily against poor service delivery

and it is therefore of paramount importance that significant changes be made at local government level to impact the lives of the community.

Organisations are composed of technical, political and cultural systems. These systems are interrelated and with the programme of strategic change management involves the alignment of these three systems to satisfy environmental pressures (Brown 2014).

Organisational development and strategic change are, but one area that local government need to critically focus on. The organisational development categories are structural, technological and behavioural. South Africa have admittedly taken and made bold strides towards modernising systems, restructuring the economy and investing in its people (Wattman, Wunker & Mohanlal, 2015).

There strategic priorities are on good governance and the realisation that they need to be a more active response to the needs of the people. Another pivotal strategic priority is to develop an innovative corporate culture, where employees' needs are recognized, the acknowledgement of the municipality's history, the environment and the criticality of the mandate for service delivery. Inevitably resistance to change will be prevalent and must be dealt with organisational developmental strategies.

The legislative and policy frameworks must be adhered to and the dissemination of this vital resource must be workshopped to all stakeholders.

Managing records in compliance with legislation and policies is not an option but an obligation for all public sector bodies. One of the most critical factors with regard the utilisation and identification options is the human relations. eThekweni must realise and appreciate the pivotal role of the employees. Employees must be encouraged to share ideas in a stress-free environment. They ultimately are the custodians of the system utilization. There may need to be some incentives to ensure that cultural changes with regard the utilisation and adoption of the DMS System. Training and development of staff must be an ongoing practice. Knowledge management especially people leaving or retiring must be embraced. SOP'S must be established. Document management systems must be looked at differently where DMS must be viewed as a management tool to assist

the organization to achieve organisational goals. Appropriate qualified staff must be employed to increase the skills constraints. Practise, procedures and processes must be kept under constant critical review in order to respond to changes on technology, legal requirement, business corporate practise and public sector environment. The most overarching strategy is one, that contributes to enabling the environment. Management must create a platform where employees can share ideas free from antagonistic comments and behaviours. They must want to innovate and collaborate so that a sense of belonging and pride is instilled. There must exist conditions that promote and reward ideas that contribute to building a strong symbiotic, synergistic organisational culture.

6.10.2 STRATEGIC PRIORITIES THAT INFLUENCE TECHNOLOGY ACCEPTANCE AS APPLIED TO EACH OF THE IDENTIFIED DOCUMENT MANAGEMENT PROCESSES WITHIN ETHEKWINI

Like other countries, South Africa is continually looking at technology to help bridge the gaps in government performance (Wattman *et al.* 2015). The benefits of technology can ease backlogs, limit government inefficiencies, increase positive stakeholder engagement, provide up to date expeditious services and so forth. The then minister of CoGTA, Pravin Gordhan remarked that we must change our level of thinking if we intend solving today's problems. Simply put, it is not 'business as usual'.

South African realised the importance of Information Communications Technology (ICT) and the benefits that can be harnessed in improving standards of service quality and increasing the overall efficiencies of government (Mutula and Mostert, 2015). They also emphasised that e-government and service delivery are inextricably intertwined.

Another paradigm shift is the municipality must consider the IT suppliers as partners rather than simply suppliers. They need to see the IT company as partners to work in collaboration with to meet their vision and aims for the future. The platform must be set for the establishment of employee engagements where a thorough understanding of the need and purpose must be espoused and interrogated at lengths, thereby formulating a

common understanding. Long term relationships must be built with IT partners so that during the product life cycle there exists a platform for reference, referral and training.

Management must align technology or ICT programmes to strategy. This will help facilitate a comprehensive approach to clarification of the vision, Gathering and analysing information, Formulation, Implementation of the strategy and finally evaluation and control. The underlying criteria of strategy and technology is one that improves performance and improves service delivery.

Channels of communication must be established and kept open among all stakeholders, suffice to mention that communication must be timeous, valid, sincere and transparent. Work processes must be evaluated and documented. Impacts of the new technology must be identified and documented also. This builds the reservoir of knowledge and can be used as a reference tool and / or knowledge management programmes.

A thorough review of the existing IT architecture must be completed before discussions can be initiated for new ICT programmes. All stakeholders must be consulted, involved and committed. Compatibility and Capacity of the IT infrastructure must be determined.

The salient point here is that Technology builds the IT architecture whereas, and more importantly change management focusses on people. This is one of the most important strategy and cannot be over emphasised. Change Management if not embraced and implemented properly can spell disaster.

Project management in collaboration with IS or a multidisciplinary team that is tasked with initiation, implementation, monitoring and feedback is critical to any ICT programme or new technology adoption. A project champion is integral to the success of any project, especially one that is involved in cross cutting of different units and clusters. An integrated approach must be devised by all stakeholders and adopted to give any new project especially, introducing new technology any chance of success.

Straub (2011) alludes to the addressing of the cognitive, emotional and contextual concerns for successful implementation of technology and technology adoption. This must be executed in a planned, structured, documented and deliberate approach.

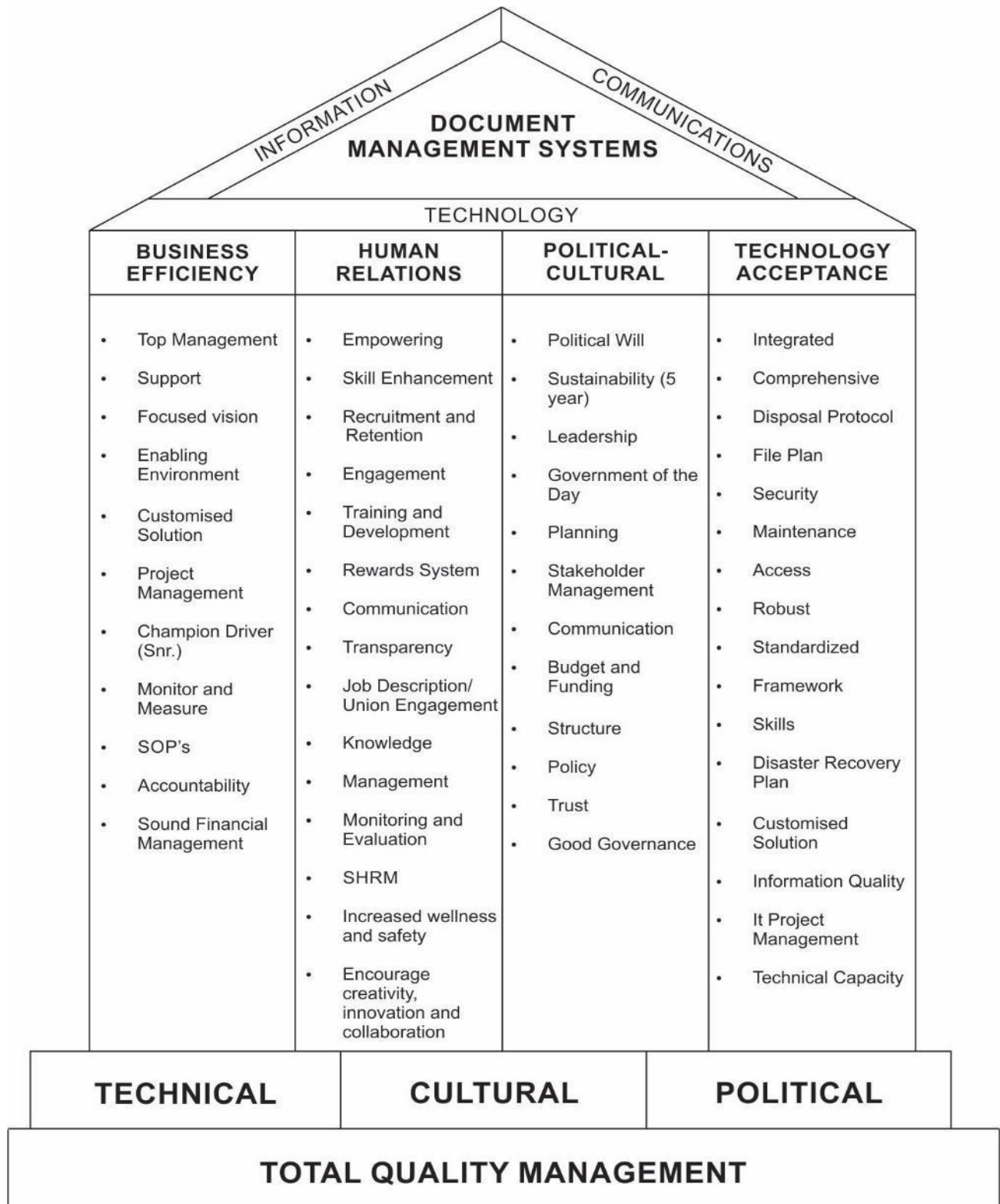


Figure 6.9 Document Management System (Source: Author's Own, 2019)

6.10.3. COMMENTARY AND CRITIQUE- PROPOSED SPECIFICATION FRAMEWORK

CONTRIBUTION OF THE FRAMEWORK TO THE UNDERSTANDING OF THE RESEARCH AREA

The researcher's review of data and published research shows that, to date, no "total quality management" and "acceptance-of-technology" comparative analyses of different document management system options have been empirically conducted within the South African public service context. The exclusive focus on South Africa represents an informed acknowledgement of the fact that the context in South Africa is made up of a unique and complex set of local conditions that differ from other countries (Gupta 2015; McCormack 2011). Even so, the study's investigation of global comparatives gave a rare opportunity for the identification of best practices especially with regard to the South African context. Clarifying the total quality management; business excellence and technology acceptance constructs of different document management systems, set the basis for the development of evidence-based methods and options for document management. Guided by this, the current study presents the first ever documented TQM and TAM analysis of different document management systems within South Africa.

The above specification framework attempts to provide a comprehensive integrated blueprint in the initiation, planning, selection and adoption of document management systems and /or new technology more especially in the public sector similar to the contexts of the eThekweni Municipality. The framework submits key strategic priorities when considering new technology and technology adoption and will endeavour to add to an improved understanding when dealing with document management systems.

6.10.4 HOW DOES IT RELATE TO THE EXISTING UNDERSTANDING OF THE STUDY?

Business running costs have become the make or break factor in business survival. Public entities too, are being closely examined and scrutinised so that the public funds can be used in the most efficient and compliant manner. Both private and public enterprises must adopt effective and efficient management tools to fundamentally make a profit and improve service delivery respectively. One of these management tools, document management systems has received diverse attention in relation to adoption, efficiency and cost management tools.

Debates abound within public services, about acceptance of various document management systems focusing on a range of issues that include, cost efficiency, environmental sustainability, quality management and efficient business function. Researchers and documented literature argue that document management systems related wastage within the public sector space could be the primal causal factor for business inefficiencies and failure. To date no “total quality management” and “acceptance of technology” comparative analyses of different management systems options have been empirically conducted within the South African public service context.

The current study’s theory thus offers new insights and evidence of document management systems practice within public entities. Respondents brought to the fore their frustration at old and obsolete DMS, and most relied on manual systems as their mainstay of DMS practice. Within the municipality, different clusters, Units and Departments worked in silo’s and engaged in a plethora of DMS utilisation. They provided insights through their experiences of cumbersome and convoluted DMS. Most responded in the negative, when asked about preferences for a DMS, and the processes involved therein.

The findings that led to the framework and recommendations suggests a comprehensive (not exhaustive though), integrated evidenced based starting point with regard DMS in the public context. This offers better insights and improved guidelines in the realm of DMS. These insights add to the very limited existing body of knowledge surrounding DMS in the public space. The framework/theory illuminates the areas of concerns and will allow for a structured, focussed approach with regard the field of DMS, especially in the public arena.

Another rather interesting but critical eye-opening insight was the political focus and factors that surfaced and which the current theory takes cognizance of. During the literature review, very limited attention was given to this important area of concern and in the South African context particularly, one that is highly politicised, the political elicited factors play a major role in the success of DMS and their objectives. The theory offers this wider emphasis on the political factors where, previous models lacked and were not aligned to. The public context is divided between the administrative and political areas

and there exists albeit a very thin diminishing line, that tries to keep the powers that be in their playing field. Therefore, this new appreciation of the political factors in the current study's proposed framework is a great addition to the current understanding of the phenomena under study. Some rather unexpected insights were also looked at in the theory/framework.

6.10.5 UNEXPECTED ISSUES THAT ARE LOOKED AT WITHIN THE FRAMEWORK

When documenting the experiential insights of the respondents and linking them to the framework some unexpected but important factors were raised.

Business survival depends on relevant accepted technologies, streamlined costs, empowered staff and other business management functions efficiencies. Fundamentally it's about best practices, limited or no wastage, leaner operations, strategic Human resources and adopting and implementing the correct strategies to name but a few. However, the study brought to the fore the political aspects that current literature with regard DMS very seldom mention or acknowledge. This was rather unexpected from the viewpoint that business decisions mostly revolve around economic considerations like costs and profits. The acknowledged appreciation though, from the theory of the current study was that the political aspects (some respondents viewed as interferences) is inextricably woven with the decisions of programs and projects of public entities and cannot be viewed as separate.

Another interesting and unexpected insight was the discussion revolving around Senior Managements avoidance on the subject of strategic priorities of the municipality. Most participants were senior level managers and executives and the rationale behind the consideration of this sample was to elicit the understanding of the strategic objectives of the organisation with regard DMS. However, the feedback received was heavily concentrated towards the day to day running of the municipality. This operational outlook was unexpected at this level of leadership. The respondents when probed further for an explanation, did allude to the fact that they merely implemented rather than formulated

strategy. They stated that strategy focus was positioned at the level of the leadership and they were not party to this decision-making process.

The framework however does have some limitations and cautions.

6.11 LIMITATIONS AND CAUTIONS ABOUT THE USE OF THE THEORY

The current study was conducted in the eThekweni Municipality. This rather complex organisation, with a staff complement of around 25000 comprises multidisciplinary departments, units and clusters, servicing an area approximately 2 555 km² and an estimated 3.7 million population. This presents its own peculiar set of challenges. The prevailing conditions, circumstances and challenges are contextualized to that of the eThekweni Municipality.

The framework was developed with a specific context and setting and therefore the transferability is limited. Smaller public sector environment or municipalities situated in rural areas in particular might not quite align to the conditions and circumstances of the eThekweni Municipality (research setting). The model also identifies related factors; however, it lacks the detail or the strength of association aspect. This then presents a challenging task of developing a prioritisation framework from this. Notwithstanding this, the framework represents a critical point of departure in which future researchers can interrogate, test and quantify.

The other caution is the dynamic nature of the environment conjoined with the dynamic factors of the framework does not encapsulate and embrace or capture that dynamism. The truth of the matter, and like all new theories, it lends itself for further testing and research.

The framework or specification revolved around the appraisal conducted in the eThekweni environment, however notwithstanding these limitations or cautions, the specifications could be a platform or catalyst to resolving some DMS issues and challenges. This could

be further developed and replicated to be a blueprint for utilization and a reference and a predictive tool in the public sector.

6.12 FURTHER DEVELOPMENT BY FUTURE RESEARCHERS

This study could be a springboard towards an investigation into how technology acceptance unfolds in the later stages of the adoption process in organizations. This study and most study's focused on individuals' behaviours of technologies acceptance and perception, it would be interesting to ascertain the organisational stance.

Looking at the public sector the worrying aspect is the sustainability issue aligned to the term of the leadership of the day. How can we measure, monitor and follow through with projects and programs that have started in one term and needs completion or implementation in another term irrespective of the political leadership or government of the day? What can we do to make sure that, what was started in one period is completed irrespective of political terms especially eGovernment initiatives and ICT Projects? The potential benefits have far reaching consequences and if these have a positive impact on service delivery and improves the lives of the citizenry, then surely, we are duty bound to act and act courageously and collectively.

6.13 SUMMARY

This Chapter was devoted to the articulation of the Theory Building process. The honorific nature of the scientific theory building process was meticulously and methodically presented. The lack of consensus on the precise definition of theory was also highlighted which further emphasized the scholarly debate and divide in this subject. A brief excursion espousing the axiomatic nature of Ontological and Epistemological philosophies alluding to their complementary stance in business research was highlighted. The very significant development of a framework or specification Model towards a blueprint or template towards the better understanding of the DMS realm, which could have relevance and impact the public sector positively was presented and elucidated.

Frame breaking insights and Strategic factors were appraised. The goal here is not to pursue certainty, precision or the absolute, rather to rekindle and galvanise the journey and fundamental pursuit or goal of research and that is, to make a relevant empirical, testable, coherent, parsimonious contribution to the scientific accumulation of knowledge. This is incumbent upon every researcher. Reasoning cannot stand alone or in isolation especially in complex phenomena and the chapter showed a migration of the puzzle pieces of reasoning metamorphizing into forms of Theory.

In sum, the chapter's stance is perched on the platform that the science of the discipline does not necessarily lie in complete and utter certainty, but in reasonable belief. The parameters of acceptance however must be steeped in definite canons of procedure, appraisal and investigation. The uptake lies in the confirmation or the falsification that theories permit. The limitations and a cautionary note with regard the Framework was further furnished. Areas for further exploration and research was then clarified. The following Chapter, Chapter seven is tasked with summaries, key findings and potential recommendations.

“Theories thus become instruments, not answers to enigmas, in which, we can rest. We don’t lie back upon them; we move forward and on occasion, make nature over again by their aid” (William James, 1907:46).

CHAPTER SEVEN CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

Chapter Seven is devoted to Conclusions and Recommendations. This chapter brings to a close the study of an Empirical Appraisal of Local Government Document Management Systems of Selected Clusters in the eThekweni Municipality. A synopsis of each chapter together with key discussions are highlighted. Findings of the study during each data collection phase are illuminated under some of the different thematic areas. The critical findings of the desktop review followed by the qualitative phase is noted. This included the semi structured interviews and the focus group discussions. The quantitative online surveys key findings follow this discussion. An overview of the Proposed Theory Development Model is also discussed. The strategic uptake factors that contributed to the development of the specification Model is summarised. Arising from this study a few limitations or shortcomings were identified. The chapter continued with the description of areas that could be explored for future empirical research and ends with final concluding comments.

The primary aim of this study was to conduct an appraisal of the municipalities Document Management systems. This was facilitated using the constructs of the Technology Acceptance Model in order to evaluate their impacts on Total Quality Management. The purpose was to support the development of a total quality management and technology acceptance best practice model. The initial chapter provided the research excursion map for the current study's journey. Introductory insights of the orientation and background to the study was espoused.

The Utility of Documents within the business space was presented. A critical discussion positioning the context of the study was forwarded. Areas of discussion included among other pertinent topics, the Geographic, Demographic and Administrative Systems of KwaZulu-Natal. Roles and responsibilities were clarified especially those of the Mayor, Exco and the Strategic Team of eThekweni Municipality.

The study was exclusively based within eThekweni Municipality. Its findings will have limited generalizability outside of similar municipality entities within similar settings. The

combined use of quantitative and qualitative methods within the study maximizes both the potential validity and reliability of the findings. The study has the potential to be replicated in other settings and could serve as a blue-print model for others in the field.

In this study the researcher used two appropriate methods that ensured triangulation thereby adding to the validity of the scientific research. Document management systems have obvious financial impact on business running costs but received limited critical appraisal. This lack of progression represented a noteworthy problem in terms of environmental sustainability, financial efficiency and socioeconomic progression. The current study offers a rare opportunity for the empirical evaluation. The discoveries from the study offers significant possibilities for reducing business costs and increasing efficiencies for all entities that have document management operations within their organisational space.

The study's investigation of global comparatives presented a rare opportunity for the identification of best practices especially with regard to the South African context. Guided by this, the current study presents the first ever documented TQM and TAM analysis of different document management systems within South Africa.

The study had to adhere to a code of principles and to rules of conduct. Within this study, the researcher took a range of steps to ensure compliance with specified ethical principles. Informed consent was sought from all prospective participants. As part of this process, all protocol was observed. Anonymity and protecting the confidentiality of participants represents the most foundational of ethical principles and therefore, needed to be critically included in the study plan. Chapter Two focused on the Literature Review.

The literature review of the study critically appraised primary and secondary literature sources that focused on paperless and print based document management systems. The primary aim of the review was to assess literature to determine the state of knowledge and the determination of the knowledge gaps with respect to total quality and business excellence in each of the modes of document management.

The key debates evident from the various literary sources are summarized as follows. It must be noted that paperless DMS has not been readily adopted in South Africa as opposed to other countries.

Firstly, there appears to be some contradictory evidence with regard to the benefits and limitations of electronic systems. Recent studies have shown that due to the expensive start-up costs of these electronic systems, limited adoption of these systems has subsequently taken place. Other issues of contention are inadequate user training and development resulting in EDMS utilisation not being fully realised. Further studies however, proved that the benefits far outweigh the shortcomings and limitations. The most significant benefit relates to the environmental sustainability of paperless options over paper-based options.

In addition, EDMS offers automation that can result in cost savings in the long term, which in the current economic climate is especially important. Economic sustainability is not only good, responsible, governance and practice but it is a make or break factor. South African researchers presented important seminal work in the use of user friendly, state of the art electronic policy support tools that can promote successful strategic policy assessment that can impact sustainable service delivery outcomes positively.

Overall, studies have surmised and concluded that successful adoption of an EDMS resulted in sizeable cost reductions, and that DMS related wastage within public services could be the primal causal factor for business failure. With this and other related observations and documented evidence there has been growing acknowledgments that inadequate provisions and poor document management, can result in potential security breaches and major challenges. On completion of the literature review a number of co concepts emerged as key to the enquiry. This very important theoretical blueprint of the study thus follows.

Chapter three dealt with the appropriateness of the chosen theoretical frameworks and concepts. The overarching focus of this chapter was to exemplify the importance of the Theoretical framework and position its relevance as the guiding plan for the entire research study. In this regard the Technology Acceptance Model and the Total Quality Management Model aligned quite well to the research enquiry.

The Technology Acceptance Model (TAM) is in some ways a collection of different theories. The discussion presented the view that actual use and adoption of the technology systems are influenced directly or indirectly by the user's behavioural intentions, attitudes, perceived usefulness of the system and perceived ease of use. The discussion further signalled that TAM also proposed that external factors affected intention and actual use through mediated effects that impacted perceived usefulness and perceived ease of use of that technology or innovation.

The Chapter proceeded to highlight the Unified Theory of Acceptance and Use of Technology (UTAUT) Model. The UTAUT is premised on the acceptance of four predictors of users' behavioural intention and these are performance expectancy, effort expectancy, social influence and facilitating conditions. The highlighted theoretical contributions were utilised as the foundation for understanding the factors and influences that are noteworthy in understanding technology acceptance motivation and resulting behaviours.

The theoretical grounding of the study referred both to theory related to total quality management and technology acceptance theoretical areas. Total quality management theory is particularly important because it confirms the widely held view with regard the need to satisfy the range of customers that any service has to satisfy. This section showcased the wholly inclusive approach to TQM.

The application of both the theories TAM and TQM were premised as the basis to guide and steer the data collection and analysis process. This also informed the methodologies chosen. Following on Data collection was conducted via combination of qualitative and quantitative approaches. This chapter outlined the methodological considerations that were taken account of in developing the study's research design and in selecting the most

appropriate methodologies. As a means of setting the scene for the discussion of methodological considerations, it was necessary to revisit the primary research problem, the study aim and objectives that offered the critical directive impetus to the study. The eThekweni Municipality was the setting for the Study.

Within the current study, a number of research paradigms were deemed relevant and as such, each was discussed. The epistemological foundation, pragmatism that best articulated the study's focus, was utilised. The procedures by which researchers go about their work of describing; explaining and predicting phenomena are called research methodology. Methodology was thus examined and explored as the study methods by which knowledge is gained. The merits of the exploratory sequential mixed method comparative case study adopted for this study was expounded. Detailed description accompanied the explanation of the four phases.

Phase one of the study was a desktop review of a wide range of documentary sources. Phase two, the Data-collection was based on qualitative individual interviews and focus group discussions. Phase-three of the study was presented as a quantitative data collection phase based on variables elicited from the first Phase of the study. In this phase, an online survey was administered. The final phase of the study focussed on validating findings and the emergent theories. The complex nature of the Organization (eThekweni Municipality) was best described to enhance the understanding of the study environment.

The subset of the population, the sampling plan was described. The four phases of the research study were discussed in depth. The critical process of data collection and analysis were elucidated. The two types of Data and the collection methods were further examined. Semi structured interviews were the primary mode of data collection for the current research study, and this section explored and documented this process extensively. Words are the main currency of the interviewing approach and subject to analytical interpretation and thus audio recording of the interviews were utilised and documented. The researcher elicited permission from the interviewees to record the interview. The process and procedures of the Interview were also summarised. Following on were the Focus Groups discussions.

The Process and facilitation of Focus Groups were highlighted. Discussion revolved around the digital recording of the focus group engagements as well as the number of focus groups required. The level of moderator involvement was noted, together with the examination of the advantages and limitations of Focus Groups.

The overview of the methodological issues relating to the quantitative phase of the study followed. The quantitative data analysis involved the analysis of data using both descriptive and inferential statistics. The exposition described the code of principles and the rules of conduct adhered to by the study. Ethics plays a pivotal and critical role in scientific study and the detailed steps undertaken to ensure professional integrity were outlined.

The current study pursued a rare opportunity for the empirical evaluation of document management systems using constructs of the technology acceptance model (TAM) and with respect to Total Quality Management (TQM). Subsequently the contribution of the study revolved around the discoveries offered from the study and the significant possibilities for reducing business costs for all entities that have document management aspects within their operations.

Data presentation, analysis and Interpretation phase was the next port of call. The structure of the chapter deliberately revolved around five distinct reporting areas. This approach was to galvanize and support the process of answering the key study questions. The overview the context for data collection and management was presented, together with the sample characteristics', gender, racial background, management roles, level of education and years of service. This was graphically exhibited accompanied by relevant meaningful commentary.

The chapter then spoke to the range of different types of document management systems in use and or referred to within the spectrum of documents in the municipality. Following on from the initial stage of document analysis, semi structured interviews was the next phase of enquiry. The core focus of the semi structured interviews was to elicit insights across a range of concerned topics. The key findings were then presented under thematic headings.

These key findings from the desktop review, the semi -structured interviews and the focus groups, will be discussed later in the chapter (under Key Findings.) The focus of the study then moved to the Proposed Framework of the current study.

Chapter six was dedicated to the very specific task of knowledge production and the migration towards development of a Theoretical Framework. The Science, Scientific Research and Scientific Method elucidations and justification were explored. Consideration was then given to a basic explanation of the Ontological, Epistemological and Philosophical perspectives. The meaning and nature of theory followed by relationship between theory and research, together with the building blocks of theory were then expounded. Virtues of good theory and a discussion with regard the strengths and weaknesses of theory building was espoused.

The presentation of the framework and the specifications for an effective Document Management Systems for implementation within Municipalities and other related public service areas was the highlight of this chapter. The strategic uptake factors were described in detail including commentary and critique of the Framework. The framework is premised on a foundation of Total Quality Management, concreted together by its core competencies and strengthened by its characteristics.

This then serves as the building blocks of the Technical, Cultural and Political pillars of the organization. These building blocks give rise to the 4 facets of an organizational landscape, namely Business Efficiency, Human Resources, Political -Cultural aspects and finally the Technology acceptance components. Some of the key areas within the Business Efficiency domain are, the support and commitment of Top Management, Visionary Leadership, and an enabling environment. Human resources issues contemplated were the critical aspect of Change Management and organisational development and escalating Human Resources to a strategic level. (SHRM).

The political and Cultural domain speaks to the Political will and appetite of the government of the day. How important are these strategies in their broader political picture? Other issues highlight the precarious line between administration and politics, especially concerning budgets and supply chain management. Leadership was also

highlighted as a noteworthy concern. The Technology Acceptance strategy aligned the framework to a comprehensive, integrated ICT programme. Of particular importance as noted, were the necessary upskilling and need to increase capacity in the Technical field. Proper disaster recovery plans were a must when implementing and adopting new DMS.

Strategic priorities relating to the identification and utilization of specific DMS options were then explained. Issues on good governance, corporate culture, compliance to legislation and standards were some of the areas covered. Strategic priorities relating to factors that influence technology acceptance involved, an integrated comprehensive ICT initiative, proper communication on all levels and a collaborative approach. Contribution of the framework, its understanding in relation to the existing research area together with the unexpected issues were presented. Cautions of the Framework were noted and areas for further research postulated together with the limitations of the study. Summary of key research findings are presented according to the data collection phases.

7.2 FINDINGS AND RECOMMENDATIONS

Firstly, the desktop review will be presented followed by the semi- structured interviews, the focus group discussions and finally the quantitative phase, the online questionnaire findings.

7.3 DESKTOP REVIEW

Some of the identified Document Management Systems commonly used presently within most of the Units and Clusters are SharePoint, OpenText, Correspondence File Plan, email management to name but a few. Some went to lengths to speak about the plethora of varying systems. The users speak of having to remember different passwords, logging off and on to different systems to access, store or retrieve information, lack of storage space, lack of security and so forth.

There is total fragmentation not only in the systems and different platforms in use, but as mentioned by the interviewees the approach is also not comprehensive and integrated.

Some systems and programs were rather old and obsolete while a few had fairly new document management systems. Different Platforms and a multitude of different servers are in use. The versions of the programmes and systems also greatly varied across the municipality.

The electricity and water departments, two of the biggest Clusters have their very own document and records management system as confirmed by the various interviewees. IT personnel (water and electricity departments) as confirmed by them answer to their own “Boss” in their respective department rather than the Municipal wide IT Head.

The unfortunate reality was that the alignment of the DMS systems were championed by the Information Systems Department (IS) rather than a collaboration between IS and the Clusters, Units and departments per say as stipulated by many interviewees. The current campaign to upgrade systems are slow and precarious. Out of 42 Units only 10 have successfully been commissioned at the time of the data collection stage. A grave shortage of skilled IS personnel to expedite the plan compounds the backlog challenge and there is growing frustration. Some of the interviewed staff at City Administration bemoaned the fact that there is only one person that they know of, that is tasked with this mammoth project.

In summary, little resources showed any growing reliance towards electronic document management systems. Participants looked at electronic document management systems as an “add on” rather than an eventual replacement for the present operating systems.

7.4 QUALITATIVE SEMI -STRUCTURED INTERVIEWS

The current study in phase two of the data collection dealt with the semi structured interviews(n=45). Some of the key findings from the discussion are summarised.

The worrying fact that was elicited in some interviews and focus groups was the fact that at two particular storage units the paper based DMS were found to be not compliant and actually failed the Audit inspections. Some senior managers mentioned that they do not

prefer any DMS process as they do not comply, to their knowledge with particular quality standards for e.g. National Archives and Record Service (NARS) legislation and ISO 15489 and USDOD. There also is non-alignment to Records Management Standards and they expressed a preference for an integrated document and comprehensive records management systems. Managers spoke about a legal threat to the institutional memory due to the non-compliant nature of the various document management systems. Serious security issues were also highlighted. Some senior staff complained that huge amounts of public information is also stored in these DMS with “zero security options”.

Staff referred to a “low-key” approach, towards an integrated document management system solution. They lamented the lack of top management support and the fragmented approach. They also rued the fact that most systems are IS initiated rather than an engagement with the service department users themselves first, so that an understanding of the requirements are unpacked and totally grasped by all. The lack of a project champion to drive the process was also something that was mentioned. Staff deplored the “force down your throat”, approach of a round peg in a square-hole scenario with regard already adopted new document management systems.

They fervently hoped that sincere, interactive engagement, prior to procurement and implementation of ICT initiatives especially those that affected them directly would be expedited. Most interviewees alluded to the fact that transparency and communication are integral and non-negotiable ingredients to successful procurement, implementation and adoption of technological communicative initiatives.

In summary participants constantly identified manual DMS as the primary preferred use. They alluded to the fact that they viewed using electronica as a “back up or top up” rather than primary utilisation. Unfortunately, and more importantly worrying, is the fact that there exists a lack of generalised knowledge with regard electronic document systems among those interviewed. Participants views on quality with regard DMS is presented next.

7.5 INSIGHTS INTO PARTICIPANTS CONCEPTION OF QUALITY WITH RESPECT TO DMS

Most participants alluded to the fact that in order for a system to be “of quality” the system must comply with local and national policy requirements. The system must be compliant with NARS and relevant ISO Standards for example ISO 15489 which is document management specific. Participants then mentioned that a secured cloud-based system could be advantageous. They mentioned that they need to access documents anywhere and more importantly anytime. They bemoaned the fact that the current systems do not facilitate flexi work conditions. Respondents cited that they could not work away from the office.

System security was noted as another critical quality aspect. The system must be flexible, and upgrades and updates must be able to be expedited without too much of a fuss. Participants also referred to the non-custom-built systems, where they “borrowed “or tweaked according to other clusters or municipalities. Participants also furnished concerns with regard competence and skills capacity. They complained about the lack of training and development with regard document management systems.

7.6 EDUCATION /TRAINING AND DEVELOPMENT AS CONTRIBUTING FACTORS TO READINESS IN ACCEPTING NEW MODES OF WORKING

Some respondents mentioned that they had been previously trained, and their current level of education were some of the contributing factors towards readiness. Another group of respondents, however, were of the view that generic educational status was irrelevant to the uptake of new document management systems, but according to them what mattered was that they be educated and sensitized about the particular change initiative.

Another set of respondents armed with a higher level of education commented that they were more ready to take on new modes of working and felt comfortable with learning new things. This group of respondents were of the opinion that with a higher level of education and training greater possibilities opened up to them especially readiness to change.

In summary most respondents were of the opinion that relevant education, training and development were positively impactful in contributing to readiness to change. When understanding factors that contributed to the uptake and acceptance of new technology, the interviewees were convinced that education and training played a critical role. A point of note however, is that the relationship is much more individualised between uptake, acceptance of technology and education, training and development.

7.7 FACTORS RELATED TO QUALITY AND USABILITY OF DOCUMENT MANAGEMENT SYSTEMS

At the beginning of the discussion most participants forwarded their understanding of the term "quality". Participants understanding of quality was how well the proposed DMS complied with standards and legislation. They referred to factors such as cost effectiveness and robustness of the system. Non-negotiable factors according to the respondents was the fact that the proposed system must be compliant on all levels. Respondents commented on the technical specifications broadly relating to ease of use, safety controls, range of functionalities and compliance.

Participants also forwarded that the easiness and convenience of the system as perceived by them was critical in their considerations. Foresight was also displayed when mention was made of the cost effectiveness of the system allied to the maintenance cost and sustainability of the technology. Compatibility of the new and old systems must also be taken heed of as far as the respondents were concerned. The next phase in the data collection findings is the focus Group discussions.

7.8 FOCUS GROUP DISCUSSIONS

In addition to the semi-structured interviews, 2 focus group discussions were held. One group had 5 and the other 7 participants respectively. The rationale behind the focus group discussions was to interrogate certain areas and to attain insights and further clarification at a "group level". The following aspects were discussed in depth: (i) important quality considerations in system choice; (ii) Cost as a determining factor in choice of

Document management system (iii) System Security as a determining factor in choice of DMS (iv) Perceived Ease of Use as a determining factor in choice of DMS. The emergent themes and key findings will be discussed under these headings that best exemplifies and answers the key research questions.

7.9 KEY QUALITY CONSIDERATION IN SYSTEM CHOICE

The participants quotations that clearly exemplifies their cited considerations are highlighted. The essence of the findings focussed more on the operational issues and day to day running. This was rather unexpected bearing in mind that the semi structured interviews comprised Senior staff that would have been involved with strategic issues. It was this dichotomy that prompted the further clarification at the focus group level.

The participants in unison responded that strategic issues were not part of their domain and decisions at that level were more for the Senior executives. The strategic direction was disseminated to their level and they complied by trying to execute the plan. Cost as a determining factor in choosing DMS was discussed next.

7.9.1 COST AS A DETERMINING FACTOR IN CHOICE OF DMS

Most of the respondents were rather insightful when discussing cost. Their take was more an appreciation for the “value for money “aspect as opposed to the Rand value. They discussed all costs more especially those “hidden “cost that must be considered and taken cognisance of. Some mentioned that “software “becomes an add on that was not previously “thought about” but all of a sudden is something that is integral to the running of the technology. This is then, according to some managers purchased at exorbitant costs. Due diligence according to most managers is a “foreign concept “but something that must be embraced and inculcated in all employees. Mention was made of wasteful and irregular expenditure, which must be eradicated. Respondents also mentioned that document management systems were determined by people that have little or no technical expertise.

7.9.2 SYSTEM SECURITY AS A DETERMINING FACTOR IN CHOICE OF DMS

All participants categorically and unanimously stated that system security was not negotiable when procuring a new DMS. They alluded to the fact that current systems in place was not secure and the municipality has faced legal challenges as a consequence of lack of security.

Respondents were of the opinion that custom -built secured systems must be a prerequisite when considering choice of DMS. Most participants remarked that the historical footprint of the municipality was placed in jeopardy due to current DMS that are not properly secured.

Perceived ease of use is the next determining factor in DMS choice and deals with the degree of effort needed in using a particular technology system.

7.9.3 PERCEIVED EASE OF USE

Apart from Security of the DMS earmarked as a pivotal criterion in choosing new technology, perceived ease of use was the next determinant identified as being crucial as a determining factor when choosing DMS. Respondents referred to the lack of proper training and sufficient education offered when introducing new technology. They fervently believed that this lack of proper relevant training and education, contributed largely to poor uptake and poor retention of users of new systems.

The feedback solicited was that the new system must be user friendly, possess a pre training package, compliance with relevant quality standards and regulations and have streamlined processes and steps in all its functionalities. Some discussants also reiterated that a partnership with the supplier must be realised so that ongoing training and back up is on hand throughout the implementation and acceptance of the new DMS.

Most participants also forwarded that the thesaurus must be scrapped initially as this only led to confusion and made users doubt themselves and their abilities. Show rather than read was the unanimous plea when commissioning new technology and new DMS. All of

these factors were determinants that contributed to perceived ease of use. Perceived usefulness is discussed in the next heading.

7.9.4 PERCEIVED USEFULNESS AS A DETERMINING FACTOR IN CHOICE OF DMS.

Trawling the literature review on perceived usefulness with regard technology acceptance, most cited that perceived usefulness to be very important and a critical contributing factor. However, both focus group discussants differed in their insights and considerations.

Both groups looked at the characteristics of perceived usefulness rather than the concept itself. The groups alluded to custom or purpose-built systems specifically for the municipality's use peculiar to their needs and wants. The discussion realised 10 important considerations which were documented in Chapter five. It is important to note that the discussants saw perceived usefulness as a multifaced concept with different characteristics as perceived by them.

7.10 KEY QUALITY IMPROVEMENT FACTORS

Discussants forwarded their individual perspectives of the concept "quality". Their own take and understanding were discussed. This individual perspective differed somewhat from the literature review. Participants however qualified this by stating that this was their experiences, and it is what informed their understanding of the concept of quality.

Despite their differences, all agreed that quality was of paramount importance in accepting new technology and new DMS. They stressed that fundamentally the system must fulfil the customers' expectations and requirements. Terms like "fit for Purpose", "Custom Built", and "High Performance" were bandied around. In summary, five distinct attributes were forwarded as critically important and that which was reflective of a good quality system.

7.11 QUANTITATIVE ONLINE SURVEY FINDINGS

Phase three of the research study was the online survey. Through simple randomized sampling a total of 186 survey respondents took part in the study. The respondents were sourced from the parent population of 23000. The main focus of the online surveys was to elicit responses with regard the uptake factors, acceptance, adoption and utilisation of an electronic DMS.

An overview summary of the participants demographics followed by the influencing factors as captured by the survey under the different themes will be presented. The ethnicities of the participants were described followed by the participants' age. It is noteworthy that age is viewed as a contributory or influencing factor as per many research studies whether individuals have a propensity for embracing new technological innovations or not. Participants level of education was then discussed. The link between the standard of education and the readiness to accept technology was noted. Occupational positions of the respondents were then presented followed by the numbers of years in their current position. A rather interesting section where respondents exhibited their self-assessed IT competence found that 51% of the respondents identified themselves as "Basic Users".

Using the current study's conceptual framework, a combination of TAM, UTAUT and TQM models, the researcher was directed to discussing 12 different variables of interest. Some of the themes together with their elicited response highlights discussed were:

- **Attitude Towards Use**

Responses showed that attitude had limited influence with regard the decision to use or adopt the technology.

- **Perceived Usefulness**

Responses highlighted that if the DMS satisfies its promises then this will be an influential factor in accepting and adopting new technology. A further influencing factor was that respondents felt that usefulness of a DMS must lead to lessening the difficulty of the task at hand.

- **Satisfaction and Enjoyment**

The satisfaction and enjoyment factor ranked high up in the participants responses when deciding to adopt, accept and utilize new technologies.

- **Subjective Norms**

The sentiments expressed, were that peers significantly influenced their motivation to accept or use new DMS. Further industry driven reputation played a significant role in the acceptance of new technologies.

- **Behavioural Control**

Most respondents wanted to be part of the process and have a contributory role, extended to continuous involvement and evaluation.

- **Perceived Security**

Unequivocal consensus was displayed by respondents as they viewed security as non-negotiable towards acceptance and utilisation of new technologies. Interestingly also, most responded that security was not only the concerns of Senior Management but part of theirs as well.

- **Perceived Risk**

Perceived risk was singularly most important factor for not using DMS. However, most respondents felt that training and awareness could go a long way in mitigating this perceived risk.

- **Perceived Compatibility**

As long as there existed alignment between DMS and the relevance of their job requirements most respondents were satisfied to accept, adopt and use the new technological initiatives. Some were content to have a trial period in place before making judgements.

- **Individual Mobility**

Customisation was not a criterion for most respondents for the adoption, acceptance and utilization of new technologies. However, flexibility of the new DMS was a priority and an influencing factor.

- **Personal Innovativeness**

As far as most participants were concerned 'innovativeness was not a "make or break" factor in embracing new technologies however, most agreed that future DMS will be IT based.

A summative overview of the various phases and findings were then elucidated, leading to the conclusion of the chapter.

7.12 RECOMMENDATIONS

Arising from the discussions and key findings of the current study, the following recommendations are presented. The following recommendations are not in any prioritized importance and not exhaustive, but suggestions as extracted from the data collection, analysis and interpretation phases.

- The profile of the ICT initiatives must be raised and embraced as a strategic function. A concerted galvanised effort must be to migrate expeditiously from manual DMS to electronic DMS. The appetite and will must be created and fuelled by a cohesive singular focussed strategy. EDMS must be the mainstay of the municipality rather than a backup or add on. Secure cloud-based options must be scrutinized and interrogated.
- Compliance of any proposed system must be non-negotiable with regard, local, national and international standards and legislations. Policy requirements and legislation must be pre-requisites when choosing new technology and new e-DMS.
- System security is another factor that must be a prerequisite and non-negotiable. Systems must be purpose built for the exact needs of the customer. Access authorization and user track and traceability must be standard options. The system must be robust and allow for updates and upgrades. Up to date anti-malware must be part of the system architecture.
- Change Management and Organizational Development must be strategic initiatives that are implemented throughout the Municipality and not as and when required. Employees must be made aware of these initiatives and programmes.

- Strategic Human Resource Management must also be a strategic function. People management is one of the most critical and pivotal resource that must be addressed appropriately especially when introducing new technologies and programs. Addressing Silo mentalities and the organisational culture are something that must take centre stage. Different clusters, Units and Departments must be aligned with similar networks, servers and technology.
- Senior management must fully support these strategic initiatives and provide resources for successful implementation. They must also be tasked with providing and creating an enabling environment at all times. Staff must be supported in all endeavours so that the mandate of the municipality of service delivery is upheld and never compromised.
- Training and Development came out quite strong in the findings as something that must be timeous, ongoing, relevant, available and impactful. When implementing new DMS a dossier of procedures and processes must be developed which could lead to S.O P's being documented and also play a part in knowledge Management.
- Suitably qualified staff with proper technical expertise must be part of the process when planning and expediting the procurement of new Technology and new DMS. A project team or a multidisciplinary team must be at the forefront when planning, implementing and commissioning new ICT programs. A champion must be able to track and monitor progress and latest developments whilst providing timeous relevant feedback.
- All costs must be disclosed and discussed upfront. Maintenance of the new DMS system together with the associated costs must be transparent and discussed. Partnerships must be built with the supplier throughout the life of the new technology. They must provide meaningful support, expert advice and training if and when needed even after implementation stage.

7.13 RECOMMENDATIONS AND CONCLUDING REMARKS

This concluding chapter brought to a close the enquiry into conducting an appraisal of the municipalities Document Management systems. This was facilitated using the constructs of the Technology Acceptance Model in order to evaluate their impacts on Total Quality Management. The eventual outcome was to support the development of a total quality management and technology acceptance best practice model that could be used in the public sector domain.

The chapter provided a synopsis of the preceding 6 chapters. Chapter One set the scene of what was to be expected. Chapter two was a systematic review of the relevant literature and included some of the debates found in the current literature. The following chapter discussed the TAM and TQM as the theoretical framework to the study. TAM is considered by researchers as the most prominent and empirically proven theory in the area of technology acceptance. UTAUT was also expounded as this is regarded as the successor to TAM.

The current study adopted and embraced the exploratory sequential mixed method design as this was best suited to answering the key objectives. Data analysis, presentation and interpretation was then expounded, and this ultimately culminated in the proposed framework being developed. The model is so designed that further testing will facilitate a better understanding of the technology acceptance behaviours and also contributes to the understanding of the dynamic nature of the technology acceptance process.

The recent surge in technology in creating competitive advantages are at the vanguard of opportunity, but as we note almost daily, it is a formidable challenge for management and organisations. The degree of technocratization and enabling a facilitating environment is a huge challenge for public sectors. However, with a concerted effort, strategic orientation and armed with a better understanding of the factors that contribute to successful implementation and adoption of technology the level of success is raised.

The recommendations borne out of the findings can contribute substantially towards a more in depth and incremental understanding towards the successful, implementation

and adoption of a customised, purpose-built document management system for the public sectors. The eThekweni Municipality has no doubt made and are making huge strides in trying to provide basic services to the citizenry, but the opportunity to embrace technologies increasingly in their strategic endeavours will go a long way in better servicing the community. The time is now.

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ANNEXURES

APPENDIX 1: SEMI-STRUCTURED INTERVIEW SCHEDULE

PARTICIPANT SEMI-STRUCTURED INTERVIEW SCHEDULE

An Empirical Analysis of Municipality Document Management Systems using constructs of the Technology acceptance model (TAM) and Total Quality Management across Selected Clusters in the eThekwin Metropolitan Municipality in KwaZulu-Natal, South Africa.

Semi-Structured Interview Schedule

1. Introduce Study and read contents of the information sheet to interviewee.
2. Outline what study is about.
3. Share Primary aim and Objectives.
4. Re-assure participant that their identity will be protected & confidentiality will be maintained.
5. Re-iterate that responses will be audio recorded and anonymity will be ensured for all.
Provide guidance on how to speak audibly to ensure that responses are clearly recorded.
6. Advise participant that my role will be as a passive facilitator.
7. Facilitator will be asking open questions.

Interviewer notes: The interview schedule and the interview content is based on the Duran (2014) Total Quality Management (TQM) criteria and the principles of the Technology Acceptance Model (TAM) (Davis, 1989).

1. What are the range of document management systems that are in use within your area of work?
2. When you talk about quality with respect to document management systems, what are the key factors what you believe determine quality?
3. Which document management system do you prefer and please provide your reasons for this choice? What are the factors that make a document management system unpopular?
4. What are the key factors that influence your views about the quality/ usability of the chosen document management system?
5. As a user of document management systems, what are the most important Quality considerations that influence your choice and preferences with regard to document management systems? Please provide reasons to support your choice.
6. What are the key performance considerations that you believe, should be critical to the efficiency of any document management system?
7. Please provide your opinion about the importance of the following factors in determining the quality of a document management system
8. What are the priority factors that you see is being critical in determining the usefulness of the chosen document management system? Please provide supporting reasons for your choice.
9. What are the factors that you see as critical in determining the perceived ease of use of an identified document management system? Please provide supporting reasons for your choice.
10. What are the key document management system components that you believe need to be rectified to ensure quality improvements? Please provide supporting reasons for your choice.
11. What do you believe the strategy for the technology adoption should prioritise in any document management system? Please provide supporting reasons for your choice.
12. What do you see is the most critical strategic priorities that influence...
 - a. Technology acceptance with regard to document management system options?

b. Choice and utilisation of specific document management system?

13. What do you believe the strategic focal areas should be when promoting improvements in ...

- a. Quality?
- b. Security?
- c. Perceived ease of use?
- d. Perceived usefulness?
- e. User satisfaction?

14. What do you see as the most critical challenges to Quality provision with respect to document management processes? Please provide supporting reasons for your choice.

15. What are the most critical strategic revisions and that you would suggest in ensuring improvement in the way document management systems are designed and implemented?

Thank Participants at end of the interview.

APPENDIX 2: QUESTIONNAIRE

An Empirical Analysis of Municipality Document Management Systems using constructs of the Technology acceptance model (TAM) and Total Quality Management across Selected Clusters in the eThekweni Metropolitan Municipality in KwaZulu-Natal, South Africa.

QUESTIONNAIRE

QUESTIONNAIRE PRE-AMBLE

1. Participants' identities will be protected & confidentiality will be maintained.
2. Responses will be recorded on the questionnaire in line with the responses provided by participants and anonymity will be ensured for all.
3. Questionnaire completion will last no longer than 20 minutes.

SECTION A: DEMOGRAPHIC INFORMATION

Participant demographics

1. Self-assessed IT competence

Basic user ☐ intermediate ☐ advanced user ☐

2. Position within the municipality.

Non-managerial ☐ middle manager ☐ strategic manager ☐

Senior executive ☐

3. Number of years employed by the municipality in the current position.

☐ less than 12 months ☐ 1-3 years ☐ 3 – 5 years

☐ 5 – 10 years ☐ more than 10 years

4. Highest Educational qualification

☐ Primary ☐ Secondary ☐ Tertiary

5. Ethnicity:

☐ Black South African ☐ Black Foreign-National ☐ Indian

☐ Coloured ☐ White- Afrikaans ☐ White-Other

☐ Other (*please specify*): _____

Primary Participant Information

6. Age: ☐ <19yrs ☐ 19-29 ☐ 30-39 ☐ 40-49 ☐ 50-5 ☐ >59

SECTION B: Please provide your opinion accurately. On a scale from 1 to 5, please mark with an X in the corresponding box / number which represents the extent to which you agree or disagree with each of the following statements, where 5 indicates “strongly agree” and 1 indicates “strongly disagree as shown on the scale below:

Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5

ATTITUDE TOWARD USE (ATU)

My pre-existing attitudes towards any document management system plays an important role in deciding whether I use it.	1	2	3	4	5
The attitudes of colleagues towards any document management system are likely to influence me in similar ways and will drive my decision to accept this technology	1	2	3	4	5
I accept that my attitudes towards any document management system does not have any bearing on whether or not I decide to use it.	1	2	3	4	5
Using the latest document management system will earn me support and favour from my peers and my management.	1	2	3	4	5
My attitude toward accepting a new document management system may affect my performance and that of the rest of the department in which I work.	1	2	3	4	5

Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5

PERCEIVED COST (PC)

My perception about the fairness of the cost of the proposed document management system is an important consideration in whether or not I decide to accept and adopt that system.	1	2	3	4	5
The perceived cost of any document management system has no influence on my decision to accept and/or adopt this system.	1	2	3	4	5
Cost of a newly introduced document management system represents one of the most important determining factors that influences acceptance of that system	1	2	3	4	5
The cost of any new system determines its quality.	1	2	3	4	5

Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5

PERCEIVED EASE OF USE (PEOU)

I will not use a system that I view as difficult-to-use regardless of how much it is likely to improve job performance.	1	2	3	4	5
I am not deterred from using a DMS by its apparent difficulty in use.	1	2	3	4	5
I accept that all new systems will be difficult to use	1	2	3	4	5
I believe that perceived-ease-of-use is one of the key most important determining factors which influence my decision to use any DMS.	1	2	3	4	5
Difficulty in using a DMS is often a result of computer literacy more than anything	1	2	3	4	5

Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5

PERCEIVED USEFULNESS (PU)

The fact that a DMS does what it promises to achieve is the most important factor to consider when deciding whether to accept and/adapt new technology.	1	2	3	4	5
Usefulness of a DMS means that it will make the job less difficult to do.	1	2	3	4	5
Usefulness of a system strongly influences how employees perceive it	1	2	3	4	5
Usefulness can only be measured by whether the system makes important performance improvements for clients of the service.	1	2	3	4	5
The real usefulness of a system can only be determined after it has been fully implemented.	1	2	3	4	5

Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5

SATISFACTION AND ENJOYMENT.

My satisfaction in using a DMS will influence my support of its continued use.	1	2	3	4	5
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Satisfaction and enjoyment of using a DMS have limited or insignificant influence in determining whether or not the system will be consistently utilised.	1	2	3	4	5
User satisfaction is primarily a result of how well the DMS performs identified job-tasks.	1	2	3	4	5
Large workstations will have limited influence in determining my satisfaction and enjoyment	1	2	3	4	5
The ergonomic design will play a huge role in my continued utilisation of the DMS	1	2	3	4	5

Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5

Subjective Norms (SN)

My peers' opinions about the newly introduced DMS influence my own motivation towards using it.	1	2	3	4	5
Industry reputation as it relates to a DMS influences my willingness to accept and adopt it.	1	2	3	4	5
My decision(s) about whether to utilise a newly introduced DMS are entirely based on my own self-assessment of benefits with little influence from others.	1	2	3	4	5
The reputation of the DMS held by senior colleagues is an important influence in my own beliefs about the system.	1	2	3	4	5

Locally developed DMS can deliver an equally efficient service than those developed in more developed countries in the northern hemisphere.					1	2	3	4	5
Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree				
	1	2	3	4	5				

BEHAVIOURAL CONTROL (BC)

It is important for me to be able to be contributing to the development of a DMS as an intended user.	1	2	3	4	5
Being involved in the development and regular evaluation of a DMS provide important motivation to me to accept and adopt it.	1	2	3	4	5
Development of a DMS is for IT experts and there is no need for my involvement as a potential user.	1	2	3	4	5
Being asked to adopt a DMS that was decided on by my management without my involvement negatively influences my motivation to use the system.	1	2	3	4	5
The most important contributors for determining the design of an intended DMS must be the potential users rather than the IT developers.	1	2	3	4	5

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
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Scale	1	2	3	4	5
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PERCEIVED SECURITY (PS)

The assessed security of a DMS is of paramount and critical importance in deciding whether to accept and/or adopt it.	1	2	3	4	5
As an end-user, the security of a DMS is not my concern but rather, that of senior management who decided on its procurement.	1	2	3	4	5
System security is primarily related to system-user behaviour's and can be individually determined by different users.	1	2	3	4	5
Security concerns of a system should be balanced against potential usefulness of the system in achieving performance requirements.	1	2	3	4	5
Systems with limited security but high usefulness can be adopted with precautionary measures e.g. using an Electronic –DMS (EDMS) with a paper-based alternative to protect against potential security shortcomings of the newly introduced EDMS	1	2	3	4	5

Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5

PERCEIVED RISK (PR)

New technology always poses more risks than any comparable existing systems.	1	2	3	4	5
Perceived risk is the single most important reason for not utilising a newly suggested DMS.	1	2	3	4	5

My assessment of a system's risk is influenced by the views of peers	1	2	3	4	5
Perceived risk of a systems can be locally managed by training potential users to be more security literate.	1	2	3	4	5
Assessment of a systems risk should be undertaken by strategic managers who procure new DMS and is not a concern for potential users.	1	2	3	4	5

PERCEIVED COMPATIBILITY (PC)

Compatibility between DMS capabilities and the requirements of the service are a critical deciding factor in my decision to uptake / accept and/or adopt a new technology.	1	2	3	4	5
Determinations about a DMS are outside the locus of control of end-point users and do not play a role on an individual's motivation to use a newly introduced system.	1	2	3	4	5
End-point users of a DMS do not possess the in-depth expertise about a system to make accurate judgments about its compatibility with the job requirements.	1	2	3	4	5
Compatibility of a DMS with the job requirements can be assessed after an agreed trial period (e.g. of 6 months) and I am willing to fully utilise the system in its trial period even if it means duplicating systems with the pre-existing alternative(s).	1	2	3	4	5

Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5

INDIVIDUAL MOBILITY (IM)

The ability for me to personally customize my user functionalities plays an important role in influencing my decision(s) to accept and/or adopt a DMS.	1	2	3	4	5
Systems that allow individual customisation to provide more efficient performance with regard to core job expectations.	1	2	3	4	5
Being able to customize my functionalities is not a necessary pre-requisite to me using a system.	1	2	3	4	5
Flexibility of a system is one of the most important aspects that influence my motivation to accept and /or use it.	1	2	3	4	5

Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5

PERSONAL INNOVATIVENESS IN IT (PIIT)

I believe that any newly introduced system should be at the “cutting edge” of innovation and should surpass systems utilised by similar service providers.	1	2	3	4	5
Innovativeness is not as important to me as the system’s ability to perform to identified work and task expectations.	1	2	3	4	5
The future of document management systems will be IT-based, and it is important that all innovative approaches make use of that above all.	1	2	3	4	5

The security risks associated with using innovative IT DMS options are a minor consideration and should not be the basis for decision whether or not a new system should be introduced.	1	2	3	4	5
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Thank you for your participation.

APPENDIX 3: FOCUS GROUP DISCUSSION SCHEDULE

PARTICIPANT FOCUS GROUP DISCUSSION SCHEDULE

An Empirical Analysis of Municipality Document Management Systems using constructs of the Technology acceptance model (TAM) and Total Quality Management across Selected Clusters in the eThekwinini Metropolitan Municipality in KwaZulu-Natal, South Africa.

FOCUS GROUP DISCUSSION SCHEDULE

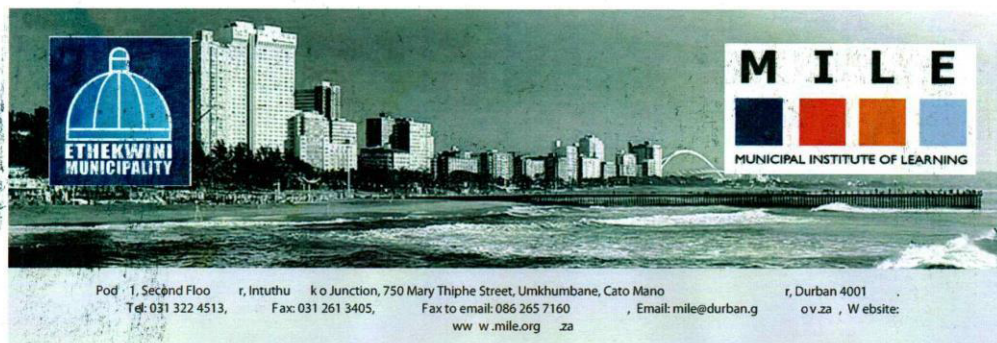
Questions

Discussants will be asked to consider / discuss the following broad topic areas:

1. What are the range of document management systems that are in operation across different departments within the municipality?
2. What are the primary key considerations that should be taken account of in determining quality performance across the most dominant document management systems within municipalities?
3. What are the factors that discussants see as being important in determining the quality of a document management system? Why are these factors important?
4. What are the factors that influence technology acceptance as applied to each of the identified document management processes within the municipality? Why are these important?
5. What are the often-observed limitations within particular document management systems and how can these be addressed to ensure improvements in processes?

6. What are the strategic priorities that influence technology adoption as it relates to choose of document management processes within the municipality?
7. What are the key priorities and focal areas that should be specified in the development of a total quality and technology acceptance framework that describes the characteristics of an effective document management system?

APPENDIX 4: GATE KEEPER'S LETTER



For attention:
Chair: Research Ethics Committee
Faculty of Management Sciences
Durban University of Technology
Durban
4001

29 June 2016

RE: LETTER OF SUPPORT TO MR V. CHETTY, REGISTRATION NUMBER 21600009 - GRANTING PERMISSION TO USE ETHEKWINI MUNICIPALITY AS A CASE STUDY

TITLE: "An Empirical Analysis of Municipality Document Management Systems using constructs of the Technology acceptance model (TAM) and Total Quality Management across Selected Clusters in the eThekweni Metropolitan Municipality in KwaZulu Natal, South Africa".

Please be informed that eThekweni Municipality's Head: City Hall Administration in partnership with the Head: eThekweni Municipal Academy (EMA), have considered the request by Mr V. Chetty to use eThekweni Municipality as a research study site leading to the awarding of a PhD in Business Administration.

We wish to inform Mr V. Chetty of the acceptance of his request and hereby assure him of our utmost co-operation towards achieving his academic goals; the outcome which we believe will help our municipality in the long run.

In return, we stipulate as conditional, that Mr V. Chetty presents the results and recommendations of this study to the related unit/s on completion.

Wishing the student all the best in his studies.

Head: EMA

eThekweni Municipality

eThekweni Municipality

2016-07-12
Date



APPENDIX 5: EDITOR'S CERTIFICATE

Academic and manuscript Editing Services



To Whom It May Concern:

Date: 11/01/2020

Re: **DOCTOR OF BUSINESS ADMINISTRATION** Thesis: Title: **An Empirical Analysis of local government Document Management Systems using constructs of the Technology acceptance model (TAM) and Total Quality Management (TQM) Across Selected Clusters in the eThekweni Metropolitan Municipality in KwaZulu-Natal, South Africa.**

Client name: VARTHARAJ CHETTY

This serves to confirm that the above identified thesis was edited and finalised by FeraPhase Academic and manuscript Editing services for language and format adherence in line with the Harvard (version 8.1) manuscript formatting requirements.

This was in preparation for submission Submitted in accordance with the requirements for the degree of **DOCTOR OF BUSINESS ADMINISTRATION** in the subject of **MANAGEMENT SCIENCES** at the **DURBAN UNIVERSITY OF TECHNOLOGY**

Dr Sunil Sagoo

Director "feraPhase Academic and manuscript editing services.

APPENDIX 6: SUMMARY OF STUDIES (Source: Author's Own, 2019)

Author Details / Year and Place of publication	Primary Aim / Sample size.	Primary Findings
Castillo-Barrera <i>et al.</i> (2012). Mexico. A method for building ontology-based electronic document management systems for quality standards.	Determining the characteristics of a high-quality electronic document management system.	Systems should be able to respond to prevailing industry needs. EDMS should be able to offer a total replacement of human capabilities.
Ballard <i>et al.</i> (2007). South Africa. Development and new forms of democracy in eThekweni.	Exploration of the emergence of new forms of local democracy using an EDMS.	Introduction of EDMS governed by prevailing cultural priorities /norms about what is acceptable or is not/ determination about whether a new EDMS is seen as empowering and not colonially derived.
Afonso <i>et al.</i> (2013). Portugal. Determinants of user acceptance of a local e-Government Electronic Document Management system (EDMS).	Assessing the factors that govern the adoption of a new EDMS within a Portuguese municipality. (n=85 offices within Portuguese government offices).	Intention to use most positively associated with adoption. Existence of facilitating conditions. Performance and effort expectancy seen as primary determinants of adoption.
Hung <i>at al.</i> (2006) Taiwan.	An assessment of the factors that determine the publics' acceptance of	Most important predictive factors were perceived usefulness, ease of use, perceived risk, trust, compatibility,

Author Details / Year and Place of publication	Primary Aim / Sample size.	Primary Findings
Determinants of use acceptance of the E-Government services. The case of online tax filing and payment system.	e-Government services that provides online tax filing services.	external influences, interpersonal influences, self-efficacy and facilitating conditions identified. Proposed model was up 72% accurate in predicting behavioural intention.
Zhang and Xun-hua (2007) China. Extended information technology initial acceptance model and its empirical test.	To test a TAM model as a predictive tool for adoption of new technology.	Developed model was shown to be able to predict up to 85% of behaviour accurately. The following factors were seen as important in determining adoption behaviours – perceived usefulness, perceived ease of use, attitude, near term behaviour, long term behaviour, compatibility, perceived enjoyment, personal innovativeness of IT, job relevance, substitutability and training impression.
Gavel Y (2015). Sweden. Bringing the national Inter-lending system into the local document supply process – a Swedish case-study.	To provide an overview of key factors that make integration of new EDMS easier within a workflow management system. See above.	perceived usefulness, perceived ease of use, seen as most critical to adoption.
Barhoumi C (2016) User acceptance of the e-information service as information resource (A new extension of the technology acceptance model). Saudi Arabia.	To critically assess the practical value of the TAM (n=107) with regard to the acceptance of an e-Library service.	User satisfaction seen as the primary determinant of adoption patterns followed by content richness, information architecture, cost of access and technology fit were seen as important proxy factors.

Author Details / Year and Place of publication	Primary Aim / Sample size.	Primary Findings
Hung <i>et al.</i> (2009) User acceptance of intergovernmental services: An example of electronic document management system. Taiwan.	An assessment of the factors that determine EDMS adoption patterns. (n=186 users' sample).	Theory of planned behaviour seen as predictive tool for adoption patterns. Findings show that perceived usefulness, ease of use, training, compatibility, self-efficacy seen as important predicting factors.
Pai & Huang (2010) Applying the technology acceptance model to the introduction of healthcare information systems. Taiwan.	Review of literature on TAM and its use within healthcare systems supported by a survey of nurses (n=366).	Three factors correlated with adoption – information quality, service quality and system quality, perceived usefulness, perceived ease of use seen as key adoption factors.
Hsiao & Yang (2010) The intellectual development of the technology acceptance model: A co-citation analysis. Taiwan.	Co-citation analysis of factors associated with acceptance of new technology / literature review.	TAM consistently shown to be a significant predictor of adoption behaviours in intention to use new technologies from the extent to which it is co-cited within relevant literature.
Legrís <i>et al.</i> (2002). Why do people use information technology? A critical review of the technology acceptance model. Canada.	Exploring the reasons why people use information technology? An analysis of the technology acceptance model literature.	The TAM accurately predicts 40% of Systems use. Perceived usefulness, perceived ease of use, attitudes toward using and behavioural intention to use identified as most significant correlates to Technology adoption
Straub, Keil & Brenner (1997) Testing the technology acceptance model across cultures: A three country study. Germany.	Assessing the application of the technology acceptance model across three cultures.	The TAM Kim hold across technologies as well is across persons, settings in times. It shows sound predictive validity. Power distance, uncertainty avoidance, individualism and masculinity.

Author Details / Year and Place of publication	Primary Aim / Sample size.	Primary Findings
Holden Karsh (2009). The technology acceptance model: its past and its future in health care. USA.	Assisting the future compatibility of the TAM as the predictive tool for technology adoption.	The TAM predicts a substantial proportion of user acceptance of health IT but needs to be modified to improve validity.
Venkatesh & Davis (2000). Theoretical extension of the technology acceptance model: four longitudinal field studies	Longitudinal Field evaluation of the Theory acceptance model in four organisations' (n=156).	Bolts social influence processes and cognitive instrumental processes significantly influenced user acceptance.
Hahn (2012) Standardising social responsibility? New perspectives on guidance documents and management system standards for sustainable development.	Assessing the quality of electronic document management systems with regard to sustainability.	Most electronic document management systems found to NOT have high acknowledgement for sustainability issues and focus more on innovative value.
Wilkins, Swatman & Holt (2009). Achieved and tangible benefits: Lessons learned from a landmark EDRMS implementation. Australia.	Evaluating lessons and achievements from the implementation off in electronic document management system.	The study shows that the involvement of staff is the point of conceptualising need for electronic document management systems is critical for later uptake and adoption.
Trkman & Turk (2009) A conceptual model for the development of broadband and e-government. Slovenia.	To evaluate the effective methodologies associated with the adoption of broadband Internet within Government departments / literature review.	Review concludes that the different range of technology acceptance models should be adopted to facilitate is why and understanding of key factors as is possible.
Sprague (2006)	This paper highlights the criticality of the EDMS and describes the three-	The paper posits that the IS department has the opportunity to play the leadership role in facilitating and coordinating this EDM plan. The paper further elucidates the various

Author Details / Year and Place of publication	Primary Aim / Sample size.	Primary Findings
Electronic Document Management: Challenges and Opportunities for Information Systems Managers. USA.	pronged approach to help structure the field.	steps that need to be taken in order to prepare for these developments. IS managers need to take up the challenge and to initiate the planning process to start binding the technology architecture in order to implement DMS, thus contributing to the improvement of organisational performances.
Nah & Lau (2001) Critical factors for successful implementation of enterprise systems.	The study revolves around ERP implementation, focusing on the critical success factors. The study identifies 11 factors that are critical to the successful implementation of ERP.	The ERP literature was reviewed, and 11 factors were identifies as being critical to the successful implementation of ER
Liviu et al. (2011). Integrated document management solution for the local Government. Romania.	This review deals with the analysis and design elements of an integrated document management solution. The empirical research attempts to identify key issues within the local governing authorities' management of the agreement and register.	The primary findings highlighted the proposed solution for the general system's architecture. The paper also showed that the key mechanisms that support the identified quality requirements.
Marciniak et al. (2013). Document management systems as a tool which improve administrative procedures.	The primary aim of this paper was to present an overview of the costs incurred by traditional record keeping. The characteristics of DMS are also expounded with the benefits	DMS are found to be more organized and automated, which DMS are found to be more organized and automated which facilitates and speeds up work. DMS also affect the decrease in paper consumption. This is critical in reducing the organisations carbon footprint and also lends itself to being more efficient and economical.

Author Details / Year and Place of publication	Primary Aim / Sample size.	Primary Findings
Of the local government units.	of such system implemented presented.	
Jones (2012). eGovernment Document Management System: A case analysis of risk and reward. UK.	An investigation into the rational for implementation of an organisational wide EDMS. It analyses via a case study how the EDMS was deployed and how the case organisation was transformed.	The overall EDMS implementation and development is mixed. Authority will need to encourage greater usage of EDMS and more importantly develop an appropriate EDMS strategy that is aligned to that of the business strategy.
Kain & Koshy (2013) Electronic document management systems; benefits and pitfalls. UK.	The benefits and pitfalls of the DMS implemented at ST. Helens and Knowsley hospitals are explored. The paper discusses the experiences and attempts to suggest possible solutions.	The overwhelming sense is that EDMS is here to stay. The findings also articulate that the positives far outweigh the negatives. As DMS evolves and develops it will be used as a blueprint for other hospitals and organisations to adopt and improve.
Bhattacharjee & Sanford (2008) The intention–behaviour gap in technology usage: the moderating role of attitude strength. USA.	The paper attempts to examine the intention/behaviour gap within the context of IT usage. There exists the low-to- medium effect of intention on IT usage behaviour.	The study reveals that change management efforts may be futile if worker possesses weak attitudes toward usage. Furthermore, understanding attitude strength will empower change management initiatives. The critical finding however was that there is hope in changing organisational users' behaviour with regard IT usage.



Response to Postgraduate Examiners Report

Student Name: Vartharaj Chetty **Student No:** 21600009

Supervisors Name: Prof. T Mgutshini **Student Qualification:** PhD

Dear Examiners

Thank you for the very constructive feedback provided on the submitted thesis. below is a summary of the actions taken in response to identified areas of concern. very effort has been made to adhere too specific corrective requirement, but this has had to be balanced with ensuring adherence to University-specified requirements; Ensuring a balanced appreciation of the conflicting examiner recommendations between the different examiners. Even so, the feedback provided has significantly improved the thesis content and is appreciated. For ease of identification, the summary of specified changes is articulated below with details about where each of the corrective actions can be found.

Examiners Comments	Chapter	Page	Response from Student
Title too lengthy	-	-	The title has been approved by the university's IREC and the Faculty Review committee (FRC) and any change requires formal retraction via institutional structures. The examiner highlights word-count restrictions as one of the motivations for the suggested change. This latter issue will be attended to by DUT's registry as part of the pre-graduation processes and a summarised version of the title will be used for certification purposes.
Restructure heading	1		See response above.
Irrelevant information	1	21-29	The content highlighted as irrelevant is included as necessary introductory material by DUT's doctoral thesis development guidance. The rationale behind the information was to provide a roadmap for the reader and expected

Examiners Comments	Chapter	Page	Response from Student
			elements as per DUT protocol. The material has been summarised further.
“Plethora of evidence, no evidence provided”	1	30	Corrected as per recommendation. Support statement provided and the word “plethora” has been removed and replaced with an academically appropriate synonym.
Too many objectives	1	31	Objective statements have been refined. The number of objectives was designed and approved by the Faculty Review Committee with a specific requirement that each objective should be simple and not cluttered with more than one knowledge generation task. This accounts for the reductionist (part by part) presentation of objectives.
Purpose of study, reconsider objective 8 as purpose or primary objective	1	31	Recommendation not effected. Guidance from a number of research sources including Guba and Lincoln (1989); Parahoo (2009) and others specify that the aim of a study should be focused on understanding a phenomena or research problem and not on the intended outcome of the study i.e. the development of a model.
Figure 4 does not depict what was carried out	1	33	Corrected as per examiner recommendation.
Chapter 1 needs a summary together with Chapters 2 and 3	1,2,3	41	Corrected as per examiner recommendation.
Chapter cannot be called Literature Review	2	43	The DUT convention and examples from other unpublished direct the student to titling chapter two as “The Literature Review” – the other examiners have left it supported current chapter nomenclature convention.
Format	2	45-46	Corrected as per examiner recommendation. Appointed an editor to effect the changes
Format into relevant sections	2	60	Arranged into relevant sections and arguments

Examiners Comments	Chapter	Page	Response from Student
Table 2 needs formatting and some content not relevant	2	53-59	Corrected as per examiner recommendation. Amended and positioned as a summarised appendix
Section 2.8 needs restructuring, no subdivisions	2	62	Corrected as per examiner recommendation.
Section 2.11, wrong place	2	75	Corrected as per examiner recommendation.
Diffusion of innovation curve- needs better explanation	3	89	Corrected as per examiner recommendation.
Table 3 needs tidying	3	94	Corrected as per examiner recommendation.
Figure 11		95	Corrected as per examiner recommendation.
Conclusion needed	3	97	Conclusion completed
Chapter 6 titled 'Theory Development' should not be Chapter 6	6		The thesis chapter arrangements are based on the Cochrane – Oxford template for chapters in a doctoral thesis and chapter 6 / chapter 2 both relate to literature/ theory but are different. Chapter 6 relates to the resulting theory contribution from the study i.e. the original contribution being made by the researcher. Other examiners have supported and praised the presence of this chapter.
Scientific reason for choosing province of study is required	4	99	Corrected as per examiner recommendation.
Heading 4.4 should change from 'Research Setting' to Research Context	4	100	Corrected as per examiner recommendation.
4.1 The Research Continuum		102	Application of the research process is per Oxford – Cochrane convention. Other examiners have acknowledged and supported the approach used in the study.
Figures 13 and 14- graphics poor	4	107	Graphics redone. Corrected as per examiner recommendation.

Examiners Comments	Chapter	Page	Response from Student
No clear indication of number of participants of focus groups	4	113	Number of participants has been reflected more explicitly than was previously done. Corrected as per examiner recommendation.
4.12 move to later	4	116	Corrected as per examiner recommendation.
Reliance on Bryman, use other sources	4	119	Corrected as per examiner recommendation.(8 removed and new sources included)
4.17.1 does not need an entire section	4	124	Corrected as per examiner recommendation.
4.18 Discussion on analyzing data	4	125	Colliazi's framework- thematic approach, content analysis discussed
4.20 Change heading	4	127	Heading changed
4.21.1 Not enough psychometric properties	4	128	More discussion around questionnaires included. Corrected as per examiner recommendation.
4.22 Omission of Factor Analysis	4	130	Substantiated on pg 105. Corrected as per examiner recommendation.
Quality of graphs- too dark	5	137...	Corrected as per examiner recommendation.
Interview log to be provided	5		DUT examination recommendation guide against this but instead, sample of the data collection tools are required. Students retain data for 7 years and may be audited during this time if required. This is in line with POPI Act provisions.
Expand on synthesis of findings	5	157	Key themes expanded. Corrected as per examiner recommendation.
Focus group number not indicated	5	158	Corrected. Corrected as per examiner recommendation.
Variables omitted	5	176	Perceived Cost and Perceived Ease of Use included on pg 182
Referencing errors	General	-	Revisited and engaged new editor
Layout	General	-	Revisited and engaged new editor
Tense	General	-	Revisited and engaged new editor
Page Break	General	-	Revisited and engaged new editor
Table of Contents	General	-	Revisited and engaged new editor
List of tables	General	-	Revisited and engaged new editor

ALL COMMENTS BY THE EXAMINERS HAVE BEEN RESPONDED TO

Student's signature:

Date: 05/11/20

Supervisor's signature: __

Date: 9/11/2020

Note: **Kindly indicate if the examiner has requested for a title Change. If yes, please be advised that the title is to be formally changed at the Faculty Research Committee and Higher Degrees Committee. Please liaise with the Faculty officer for further guidance.**



M L Sultan/Steve Biko/City Campus Tel: 031 373 2000 P O Box 1334, Durban, 4000
Pietermaritzburg Campus Tel: 033 342 1088 P O Box 101112, Scottsville, 3209

Post Graduate Checklist

No	Document	Student verification	Faculty Officer Verification
1	Attach Academic Record <i>NB: Registration for the current academic year is compulsory</i>	✓	
2	Indicate the academic years registered for NB: specify Full time or Part Time Max Masters: 3 Max PhD: 4 <i>Note: A student cannot submit without meeting the minimum criteria of 1 year for a Masters student and 2 years for a DPHIL</i>	3 years full time 2017 2018 2019 2020	
3	Date of FRC Proposal Approval		
4	Did you apply for Interruption/Extension of Studies? If yes, please specify		
5	Date of Submission of PG 5 - Intention to Submit	11/03/2020	
6	PG 6 - Nomination of Examiners (Supervisor to ensure this is complete- student is not privy to this)		
7	PG 7 – Submission of Dissertation for Examination	✓	
8	Ethics Clearance (Include as annexure) i.e. did you receive full approval to conduct your study? If yes please confirm which clearance has been received • Faculty Research Ethics Clearance (Level 1 and 2 only) OR • Institutional Clearance (Level 2-IREC, Level 3)	IREC	IREC
		FREC	FREC
9	Gate keepers letters (Include as annexure on the dissertation/thesis)	✓	
10	Turn it in report – under 20% (Please ensure report is signed off by the supervisor and included as an annexure on the dissertation/ thesis)	✓	
11.	Title – the student is to ensure the title of the dissertation/thesis has not changed from the initial title approved at FRC	✓	

I, Vartharaj Chetty, 21600009 hereby confirm the above mentioned documents have been submitted to the Faculty Research Officer accordingly along with the PDF Final signed Bound Thesis/ dissertation for Examination.

I acknowledge that in the event of a Pass, I will **only** be eligible for graduation upon satisfying the Minimum Duration Rule G25 (2)(a) or Rule G24 (2)(a)

Rule G25(2)(a) – Applicable to a Doctoral Study

(2) Minimum and maximum duration

(a) The minimum duration for a Doctoral Degree shall be two consecutive academic years of registered

study.

Rule G24(2)(a) – Applicable to a Masters Study

(2) Minimum and maximum duration

(a) The minimum duration for Master's Degree shall be one academic year of registered study.

Student

Date: 11/11/2020

Supervisor

-

Date: 11/11/2020

FRO

Date: _____

FRO STAMP



PROOF OF REGISTRATION
To Whom It May Concern

It is hereby confirmed that the under mentioned person is a registered student at DURBAN UNIVERSITY OF TECHNOLOGY

Surname: CHETTY
Student Number: 21600009
Registration Year: 2020
Block: POST-GRAD ANNUAL REGISTRATIONS
Department: ENTREPRENEURIAL STUDIES & MGMT
First Names: VARTH
Qualification: DIPBAD
Offering Type: Durban
Period of Study: Study P
Faculty: FACULTY

Subject	Description	PreReq/Exp	Block	Class Group	Offering Type	Exam
RPD3631	Registration Fees/Lectures P0 POST-GRAD ANNUAL REGISTRATIONS RESEARCH PROJECT AND DISSERTATION (GRD REG)		P0	A	D1	2020

* Subjects with Requisites will be cancelled if the requisite rules are not met in mid-year exams. Refer to Department handbook.

Outstanding Balance: 29170.00

Please verify and rectify the above registration details with the Faculty Office to avoid academic and financial penalties in the General handbook.

Faculty Officer