



**FACTORS INFLUENCING E-INCLUSION IN THE UK:
A STUDY BASED ON USES AND GRATIFICATIONS
THEORY AND DECOMPOSED THEORY OF PLANNED
BEHAVIOUR**

Thesis submitted for the degree of Doctor of Philosophy

by

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DEDICATION

I dedicate this work:

To my loving and caring mother: ***Fatemah*** your continuance prayers, love, support, and encouragement helped me to achieve my dream.

To my soul mate, loving and caring husband: ***Falah Al-Matar***, whose unconditional encouragement and support financially and emotionally made it possible for me to achieve my dream.

To my sweet hearts children:

Alyaafor believing in me

Dalalfor being a great friend

Farahfor her endless compliments

Sarahfor filling my life with joy

Matarfor his love

You have made me stronger, better and more fulfilled than I could have ever imagined.
I love you to the moon and back.

To my sisters and brothers who supported and encouraged me through the journey and who were always in touch and kept the distant close.

I love you all.

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DECLARATION

I declare that the ideas, results, analysis, findings and conclusions reported in this thesis are entirely my own efforts, except where otherwise acknowledged. In the course of completing this thesis, its contents have been drawn on for publication and conference presentation by the author:

1. Weerakkody, V., Dwivedi, Y. K., El-Haddadeh, R., Almuwil, A., and Ghoneim, A. (2012). Conceptualizing E-Inclusion in Europe: An Explanatory Study. *Information Systems Management*, 29(4), 305-320.
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ABSTRACT

The parallel between e-government and e-Inclusion research are critically important. It helps to understand how policies, society, organizations, and information technologies come together and it also helps to understand how the e-Inclusion factors impact e-government use and vice versa. This study attempts to explore the theoretical and practical intersections of e-Inclusion and e-adoption (Particularly e-government) and to show how they complement and possibly enrich the potential of e-Inclusion research. The rationale for this approach is that combining research on e-Inclusion and e-government has the potential to better understand the factors influencing e-Inclusion since they both share a common theme of Inclusive e-government.

The aim of this research is to examine the factors that influence e-Inclusion in the context of e-government in the UK, through combining the decomposed theory of planned behaviour with Use and Gratification Theory (U&G). These two theories are used to develop a conceptual model for studying the multi-faceted dimensions of e-Inclusion. The two theories are chosen because of their appropriateness for e-Inclusion research; the critical factors that influence e-inclusion can be covered by (DTPB) constructs while the individual's gratifications that determine using specific Internet activities is covered by (U&G)

To fulfil the research aim and objectives, a quantitative research method was employed. The research subjects were citizens who are Internet users. Their views were sought through a survey that included 510 self-administered and group-administrated questionnaires.

The conceptualisations of e-Inclusion and e-government have important implications for both researchers and policymakers. For researchers, this study delineates the complex and recursive relationships between e-Inclusion and e-government contributing towards the exiting limited body of knowledge in the field. For practice, it offers directions to help create a more comprehensive strategy that takes into consideration the alignment of e-government initiatives and e-inclusion policies.

TABLE OF CONTENTS

DEDICATION	II
ACKNOWLEDGMENT.....	III
DECLARATION.....	IV
ABSTRACT.....	V
TABLE OF CONTENTS	VI
LIST OF TABLES	XI
LIST OF FIGURES	XIV
LIST OF FORMULAS	XV
CHAPTER ONE: INTRODUCTION.....	1
1.1 INTRODUCTION.....	1
1.2 BACKGROUND OF THE STUDY.....	1
1.3 RESEARCH AIM AND OBJECTIVES.....	4
1.4 RESEARCH APPROACH.....	5
1.5 RESEARCH PROCESS.....	6
1.6 THESIS OUTLINE	6
1.7 CHAPTER SUMMARY	8
CHAPTER TWO: LITERATURE REVIEW.....	10
2.1 INTRODUCTION.....	10
2.2 E-INCLUSION AND E-GOVERNMENT.....	10
2.3 DIGITAL INCLUSION/E-INCLUSION	13
2.3.1 E-Inclusion concepts and fundamentals.....	14
2.3.1.1 Digital Divide	15
2.3.1.2 Social Exclusion	16
2.3.1.3 Social Cohesion	17
2.3.2 The origin of e-Inclusion	18
2.3.3 The benefits of e-Inclusion	20
2.3.3.1 Economic benefits	20
2.3.3.2 Social benefits	21
2.3.3.3 Individual benefits	21
2.3.4 European strategies on promoting e-Inclusion.....	22
2.3.5 E-Inclusion in the UK.....	26
2.3.6 Theories and models that are relevant to e-Inclusion.....	30
2.3.7 E-Inclusion Taxonomy	31
2.3.7.1 Demographical Dimension	34

2.3.7.2	Economic Dimension	35
2.3.7.3	Social Dimension	35
2.3.7.4	Culture Dimension.....	36
2.3.7.5	Political Dimension	36
2.3.7.6	Infrastructure Dimension	36
2.4	ELECTRONIC GOVERNMENT/E-GOVERNMENT	41
2.4.1	The origin of e-government	42
2.4.2	The stages of e-government.....	43
2.4.3	Theories that are relevant to e-government adoption.....	45
2.5	CHAPTER SUMMARY	49
CHAPTER THREE: CONCEPTUAL MODEL		52
3.1	INTRODUCTION.....	52
3.2	RESEARCH GAPS IDENTIFIED	52
3.2.1	Research Gap 1: E-inclusion as an emerging field	53
3.2.2	Research Gap 2: The theory gap in e-Inclusion.....	53
3.2.3	Research Gap 3: Lack of e-Inclusion frameworks.....	53
3.2.4	Research Gap 4: The practise gap in e-Inclusion	54
3.2.5	Research Gap 5: The theory-practise gap in e-Inclusion	54
3.2.6	Research Gap 6: Lack of e-Inclusion research in published e- government research.....	54
3.3	FOUNDATION OF THE PROPOSED CONCEPTUAL MODEL	55
3.3.1	Uses and gratifications theory (U&G)	56
3.3.2	Decomposed theory of planned behaviour (DTPB).....	59
3.3.3	Perceived trust	62
3.3.4	Perceived risk.....	63
3.4	CONCEPTUAL FRAMEWORK.....	64
3.5	RESEARCH HYPOTHESES.....	72
3.5.1	Attitudinal Beliefs	74
3.5.1.1	Perceived Usefulness (PU)	74
3.5.1.2	Perceived Ease of Use (PEOU)	74
3.5.1.3	Trust in e-government (TG).....	74
3.5.1.4	Perceived Risk (PR)	75
3.5.1.5	Trust in Internet (TI).....	75
3.5.1.6	Compatibility (COMP).....	76
3.5.2	Control Beliefs.....	76
3.5.2.1	Accessibility (ACC)	77
3.5.2.2	Capacity (CAP)	77
3.5.2.3	Availability (AV)	78

3.5.2.4	Affordability (AFF)	78
3.5.3	Normative Beliefs	79
3.5.3.1	Interpersonal Influence (II).....	79
3.5.3.2	Media Influence (EI)	80
3.5.3.3	Government Influence (EI).....	80
3.5.4	Gratifications	81
3.5.4.1	Content Gratifications.....	87
3.5.4.2	Process Gratifications.....	87
3.5.4.3	Social Gratifications	88
3.5.5	Dependent Variables.....	88
3.6	CHAPTER SUMMARY	89
CHAPTER FOUR: RESEARCH METHODOLOGY		92
4.1	INTRODUCTION.....	92
4.2	RESEARCH PHILOSOPHY	93
4.2.1	Ontology vs. Epistemology	93
4.2.2	Positivism vs Interpretivism	94
4.2.3	Critical Research	95
4.2.4	Selection of Positivist as the Suitable Epistemology	96
4.3	RESEARCH DESIGN	97
4.4	RESEARCH APPROACH/METHOD	101
4.4.1	Quantitative Research.....	101
4.4.2	Qualitative Research.....	102
4.4.3	Mixed Method Research.....	102
4.4.4	Selection of Quantitative as Suitable Research Approach	103
4.5	TYPES OF RESEARCH DATA	103
4.5.1	Primary Data	104
4.5.2	Secondary Data	104
4.5.3	Selection of Primary Data for this study	105
4.6	SURVEY RESEARCH APPROACH	105
4.6.1	Justification for Survey as a Preferred Research Approach for this Study	106
4.6.2	The Sampling Process	107
4.6.2.1	Sampling Frame	108
4.6.2.2	Sampling Technique.....	108
4.6.2.3	Sample Size	110
4.6.3	Selection and Justification for Questionnaire as Data Collection Tool	110
4.7	SURVEY INSTRUMENT DEVELOPMENT AND VALIDATION	113
4.7.1	Survey Measures	113
4.7.2	Questionnaire Development	117

4.7.3	Questionnaire Design	117
4.7.3.1	Response Format	117
4.7.3.2	Question Content and Wording	119
4.7.3.3	Exploratory (Pre-Test) Questionnaire: A step toward Revision.....	119
4.7.3.4	Pilot Testing	121
4.7.4	Questionnaire Distribution and Administration	122
4.7.5	Non- Response Bias and Response Rate.....	122
4.7.5.1	Non-Response Bias	122
4.7.5.2	Response Rate	123
4.8	DATA ANALYSIS	124
4.8.1	Coding of Response.....	124
4.8.2	Cleaning and Screening Data.....	125
4.8.3	Selecting and Justifying the Data Analysis Strategy	125
4.9	ETHICAL CONSIDERATIONS	126
4.10	CHAPTER SUMMARY	127
	CHAPTER FIVE: RESULTS.....	130
5.1	INTRODUCTION.....	130
5.2	RESPONSE RATE	130
5.3	RESPONDENTS' DEMOGRAPHIC CHARACTERISTICS.....	131
5.4	DESCRIPTIVE STATISTICS	140
5.4.1	Reliability Assessment.....	140
5.4.2	Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) Test and Bartlett's Test of Sphericity	144
5.5	CONFIRMATORY FACTOR ANALYSIS	144
5.5.1	CFA control beliefs factors.....	146
5.5.2	CFA attitudinal beliefs factors.....	148
5.5.3	CFA for normative beliefs factors	150
5.5.4	CFA for gratifications	152
5.5.5	CFA for perceived behavioural control, attitude, and subjective norms	154
5.5.6	CFA for behavioural intention.....	156
5.5.7	CFA for use and satisfaction.....	157
5.5.8	CFA for trust in government, trust in Internet, and perceived risk.....	159
5.6	MEASUREMENT MODEL WITH ALL THE CONSTRUCTS	161
5.6.1	Validity Assessment.....	165
5.6.1.1	Convergent validity	165
5.6.1.2	Discriminant Validity	168
5.7	STRUCTURAL MODEL AND HYPOTHESES TESTING.....	171
5.8	CHAPTER SUMMARY	173
	CHAPTER SIX: DISCUSSION.....	176

6.1	INTRODUCTION.....	176
6.2	OVERVIEW OF THIS RESEARCH	176
6.3	INSTRUMENT VALIDATION.....	178
6.4	HYPOTHESIS TESTING AND SIGNIFICANCE OF EMPIRICAL FINDINGS...	178
6.5	CHAPTER SUMMARY	186
	CHAPTER SEVEN: CONCLUSION.....	188
7.1	INTRODUCTION.....	188
7.2	REVISITING RESEARCH GAPS.....	188
7.2.1	Research Gap 1: E-inclusion as an emerging field	188
7.2.2	Research Gap 2: The theory gap in e-Inclusion.....	189
7.2.3	Research Gap 3: Lack of e-Inclusion frameworks.....	190
7.2.4	Research Gap 4: The practise gap in e-Inclusion	191
7.2.5	Research Gap 5: The theory-practise gap in e-Inclusion	191
7.2.6	Research Gap 6: Lack of e-Inclusion research in published e- government research.....	192
7.3	THEORETICAL CONTRIBUTIONS.....	192
7.4	IMPLICATIONS FOR POLICY AND PRACTICE	193
7.5	RESEARCH LIMITATIONS.....	198
7.6	FUTURE RESEARCH.....	199
7.7	REVISITING THE AIM AND OBJECTIVES OF THIS STUDY	200
7.8	CHAPTER SUMMARY	202
	REFERENCES.....	204
	APPENDIX A: QUESTIONNAIRE SURVEY	227

LIST OF TABLES

Table 2.1 Mechanisms of exclusion and how people become excluded	17
Table 2.2 Six themes used by European Commission to foster e-Inclusion.....	25
Table 2.3 European Strategies to Promote e-Inclusion in Europe.....	25
Table 2.4 Individuals never used the Internet in the UK.....	27
Table 2.5 Information Society Indicators in the UK.....	28
Table 2.6 Various Theories and Models Adopted for e-Inclusion	32
Table 2.7 Conceptual Taxonomy of Factors Influencing E-Inclusion	38
Table 2.8 A summary of some e-government stage models	43
Table 2.9 Theories of technology acceptance/adoption and use	47
Table 3.1 Key inhibitors for e-Inclusion in the context of e-government	55
Table 3.2 Previous U&G studies and gratifications used	57
Table 3.3 Gratifications dimensions adopted for this study	58
Table 3.4 Uses and gratifications studies in IS research	60
Table 3.5 Constructs Definition and Sources.....	67
Table 3.6 Constructs measurements	69
Table 3.7 Research hypotheses.....	73
Table 4.1 Differences between Positivism and Interpretivism.....	95
Table 4.2 Differences between exploratory, descriptive, and explanatory research.....	97
Table 4.3 List of items for the constructs used for this study.....	114
Table 5.1 Gender of Respondents.....	131
Table 5.2 Respondents' Age Group.....	132
Table 5.3 Respondents' Employment Status	132
Table 5.4 Respondents' Income	133
Table 5.5 Respondents' Education	133
Table 5.6 Respondents' Area.....	133
Table 5.7 Type of Users	134
Table 5.8 Accessed e-Government	134
Table 5.9 List of e-government services used by e-government users.....	135
Table 5.10 Other e-government services listed by e-government users.....	135
Table 5.11 Number of Computers at home.....	136
Table 5.12 Respondents' Internet Experience	136
Table 5.13 Main reason for not using the Internet	136
Table 5.14 Internet Access Locations.....	137

Table 5.15 Shopping Online	137
Table 5.16 Social Networking	137
Table 5.17 Type of Internet connection	138
Table 5.18 E-Government Awareness	138
Table 5.19 Factors motivate respondents to interact with e-government	139
Table 5.20 Benefits gain from using e-government	139
Table 5.21 Using ICT/Internet.....	139
Table 5.22 Respondents' Internet & computer skills	140
Table 5.23 Reliability of measurements	142
Table 5.24 Descriptive Statistics	143
Table 5.25 KMO and Bartlett's Test	144
Table 5.26 Characteristics of different fit indices demonstrating Goodness-of-Fit across different model situations.....	146
Table 5.27 Overall fit indices for control beliefs	146
Table 5.28 Unstandardized and Standardized Estimates for control beliefs	147
Table 5.29 Overall fit indices for attitudinal beliefs.....	149
Table 5.30 Unstandardized and Standardized Estimates for attitudinal beliefs.....	149
Table 5.31 Overall fit indices for normative beliefs.....	151
Table 5.32 Unstandardized and Standardized Estimates for normative beliefs.....	151
Table 5.33 Overall fit indices for gratifications	153
Table 5.34 Unstandardized and Standardized Estimates for gratifications	153
Table 5.35 Overall fit indices for PBC, ATT, and SN model.....	155
Table 5.36 Unstandardized and Standardized Estimates for PBC, ATT, and SN model.....	155
Table 5.37 Overall fit indices for behavioural intention	156
Table 5.38 Unstandardized and Standardized Estimates for control beliefs	157
Table 5.39 Overall fit indices for use and satisfaction	158
Table 5.40 Unstandardized and Standardized Estimates for control beliefs	158
Table 5.41 Overall fit indices for trust in government, trust in Internet, and perceived risk	159
Table 5.42 Unstandardized and Standardized Estimates for trust in government, trust in Internet, and perceived risk	160
Table 5.43 Overall fit indices of measurement model with all constructs	161
Table 5.44 Unstandardized and Standardized Estimates for gratifications	162
Table 5.45 Summary results of convergent validity	166
Table 5.46 Discriminant validity	170
Table 5.47 Overall fit indices of structural model	171
Table 5.48 Fit indices for measurement and structural models	171
Table 5.49 Path loadings and critical ratios within constructs in the structural model.....	173

Table 6.1 Path loadings and critical ratios within constructs in the structural model.....	180
Table 7.1 Examples of e-Inclusion white papers and reports used in this research.....	189
Table 7.2 The reasons behind digital exclusion by non-Internet users in the UK	195

LIST OF FIGURES

Figure 2.1 Digital divide versus e-Inclusion.....	19
Figure 2.2 Level of e-Inclusion gaps in the UK.....	29
Figure 2.3 A cumulative and recursive model of successive kinds of access to digital technologies.	33
Figure 3.1 The decomposed theory of planned behaviour (Taylor and Todd, 1995)	61
Figure 3.2 The proposed research model.....	68
Figure 4.1 Overview of research design of the study	100
Figure 5.1: Gender of Respondents.....	131
Figure 5.2 Respondents' Age Group	132
Figure 5.3 Respondents' Employment Status.....	132
Figure 5.4 Respondents' Income	133
Figure 5.5 Respondents' Education.....	133
Figure 5.6 Respondents' Area	133
Figure 5.7 Type of Users.....	134
Figure 5.8 Accessed e-Government.....	134
Figure 5.9 List of e-government services used by e-government users	135
Figure 5.10 Other e-government services listed by e-government users	135
Figure 5.11 Number of Computers at home	136
Figure 5.12 Respondents' Internet Experience.....	136
Figure 5.13 Main reason for not using the Internet	136
Figure 5.14 Internet Access Locations	137
Figure 5.15 Shopping Online	137
Figure 5.16 Social Networking.....	137
Figure 5.17 Type of Internet connection	138
Figure 5.18 E-Government Awareness.....	138
Figure 5.19 Factors motivate respondents to interact with e-government	139
Figure 5.20 Benefits gain from using e-government	139
Figure 5.21 Using ICT/Internet	139
Figure 5.22 Respondents' Internet & computer skills	140
Figure 5.23 Confirmatory factor model for control beliefs.....	148
Figure 5.24 Confirmatory factor model for attitudinal beliefs.....	150
Figure 5.25 Confirmatory factor model for normative beliefs.....	152
Figure 5.26 Confirmatory factor model for Gratifications.....	154

Figure 5.27 Confirmatory factor model for perceived behavioural control, attitude, and subjective norm	156
Figure 5.28 Confirmatory factor model for behavioural intention.....	157
Figure 5.29 Confirmatory factor model for use and satisfaction	159
Figure 5.30 Confirmatory factor model for trust in government, trust in Internet, and perceived risk	160
Figure 5.31 Measurement model for all the constructs.....	164
Figure 6.1 Structural Model with standardized paths coefficient (only significant paths are shown)	181
Figure 6.2 E-government use by gender	182
Figure 6.3 Location of Internet use by gender	183
Figure 6.4 Level of e-Inclusion gaps model	183
Figure 6.5 The Main reason for not using e-government.....	186

LIST OF FORMULAS

Formula 1 for computing average variance extracted	166
Formula 2 for computing construct reliability	166

CHAPTER 1: INTRODUCTION

CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION

This chapter provides an overview of the thesis; beginning with an outline to the background of the study. Throughout the chapter, the research problem is articulated along with the study aim and objectives. A brief description of the methodological approach applied in the study is also provided. The chapter concludes by discussing the significance of the study and its novelty within the field of e-Inclusion, followed by an outline of the structure and organisation of the thesis.

1.2 BACKGROUND OF THE STUDY

Since the introduction of electronic government in the UK in the late 1990's, successive governments have defined policies and invested on digital inclusion initiatives with the ambition that all citizens and institutions will have access to digital content and technologies that allow them to create and support healthy, successful, and cohesive 21st century communities. Moreover, to exploit the educational, economic, and social opportunities available through affordable ICTs, successive governments have looked at digital inclusion to support many policy areas such as social exclusion, community development, transformational government, product and service accessibility, data sharing and skills over the past the years. In addition, the UK has always been active to explore ICT and digital inclusion policies to improve efficiency in operational services and cut cost of public services in the UK. However, challenges still remain that all members of a community will be benefitted equally from the current digital inclusion policies. Moreover, high usage rates are essential and prerequisite for successful for the adoption and diffusion of public services that are offered online. While 97 percent of public services were available online in the UK in 2010, this has not resulted in greater use of these services by citizens (Seybert, 2011). In 2013, although 87 percent of UK households had Internet access (broadband connection) and 87 percent of individuals were regularly using the Internet and 77 percent purchased or ordered online, interaction with public authorities did not reach more than 33% for obtaining information, 22 percent for downloading forms, and 22 percent for returning filled forms (Information society statistics website, 2014). This gap will continue to widening with the government's plan to have its services becoming "digital by default" – meaning a group that

needs public services the most could soon be struggling to enjoy the same ease of access as others with less need. The usage of electronic government by citizens can be influenced by several factors, (e.g. costs, trust, lack of skills, lack of access and disinterest). However, these factors are not all exclusive to e-government, some address the participation in information society in general (Becker et al., 2008).

Becker et al. (2008) has distinguished different steps of participation in the information society by analysing citizens' use of different Internet activities. Becker was able to identify four gaps between different Internet activities used by the citizens in Germany. The first gap was between the total population and Internet users, the second gap between Internet users and e-commerce users, the third gap was between e-commerce users and e-government users (for obtaining information), and the fourth gap is between the e-government users (for obtaining information) and e-government users (for transaction). Drawing from Becker's study, the same approach was used to look at citizens' use of different Internet activities in the UK. Four gaps have been identified in the UK for the level of citizens' participation in the information society and e-Inclusion based on the latest available data (See Table 1) (Information society statistics website, 2014, UK e-government fact sheet, 2014). The first gap is between the total population and the Internet users, 17 percent of the UK population never used the Internet. The second gap is between the Internet users and the e-commerce users, while 83 percent of the total population have used the Internet only 60 percent of the population have used it for buying or ordering goods. The third gap is between the e-commerce users and the e-banking users; while 60 percent of the population used e-commerce only 40 percent of them have used it for e-government services. The fourth gap between people who use e-government for the purpose of information and those who use e-government for the purpose of transactions was omitted since the data was not available. Although Becker's approach was successful in identifying the specific e-Inclusion gaps between citizens, the approach could not determine which measures to undertake in order to increase inclusiveness of electronic public service delivery.

Despite the number of public services being made available online in the UK increasing dramatically in recent years, this has not resulted in greater use of these services. Citizen's use of these e-government services is declining and has dropped. In 2013, 41 percent of the population were using the Internet to interact with public authorities while in 2010, 48 percent were using the Internet to interact with public authorities, meaning 7 percent of the UK's population has actively stopped interacting with the government online. Moreover, both e-

commerce and e-banking are transactional services, but they are both used by citizens more than e-government and the percentage of usage for e-commerce and e-banking are increasing every year. Therefore, citizens who used e-commerce and e-banking have the qualification required to engage in more complex actions and also they do not have trust issues with the internet. However they do not participate in e-government at all. We conclude that e-government use is the last level of e-Inclusion based on this approach, and finding the factors that determine and influence people to use e-government will help to understand the factors that influence e-Inclusion and better explain possible inclusion gaps. Consequently, a theoretical basis is needed to determine the factors that could better explain possible e-Inclusion gaps.

Drawing from the aforementioned argument, in order to address the above research gaps from a theoretical angle, and to find out the critical e-Inclusion factors that influence citizens' use of e-government services, this research was conducted. The first stage of the research was to conceptualise e-Inclusion through a review and synthesis of the limited normative sources available and policy documents (Almuwil, et al., 2011). The second stage was to refine the taxonomy and find out the critical e-Inclusion factors that influence citizens' use of e-government services by conducting an explanatory study (Weerakkody et al., 2012). The third stage is to develop a research model that can capture and examine the e-Inclusion factors that influence citizens' use of e-government services. The fourth stage is to conduct a survey to validate the research model and test the hypotheses. The last stage is to present the findings, implication of the research to theory and practice, highlight research limitations, and future research.

While the aforementioned context offers the rationale and motivations for this research, the author suggests that the parallel between e-government and e-Inclusion research are critically important. It helps to understand how policies, society, organizations, and information technologies come together and it also helps to understand how the e-Inclusion factors impact e-government use. This study is an attempt to explore the theoretical and practical intersections of e-Inclusion and e-adoption (Particularly e-government) and to show how they complement and possibly enrich the potential of both e-Inclusion and e-government research. This is particularly important as there is limited theoretical understanding of the complexities and challenges facing e-Inclusion. Given this context, this thesis aims to answer two research questions as follows:

- What are the factors that influence e-Inclusion in the European context?

- What are the key factors that might influence e-Inclusion in the context of e-government in the UK?

With this premise, the following aims and objectives are introduced for the research.

1.3 RESEARCH AIM AND OBJECTIVES

The aim of this research is to investigate the key factors that influence e-Inclusion in the context of e-government in the UK.

The above aim leads to the formulation of a conceptual model of e-Inclusion that can advance the knowledge in the field of e-inclusion. It is hoped that this conceptual model will contribute to the field of e-Inclusion and e-government by helping to establish a better understanding of the main factors that can enhance the digital inclusion among the community with particular emphasis on the UK. The conceptual model will be based on two well-established theories; Uses and gratifications theory and decomposed theory of planned behaviour.

To realise the research aim, the following objectives will be pursued:

- Review literature on the e-Inclusion domain, concepts and fundamentals, the origin of e-Inclusion, the benefits of e-Inclusion, European strategies to promote e-Inclusion, e-Inclusion in the UK, theories and models that are relevant to e-Inclusion, and finally e-Inclusion taxonomy.
- Review literature on the e-government domain, the origin of e-government, the stages of e-government, and theories that are relevant to e-government.
- Formulate a conceptual taxonomy to identify and capture the factors influencing e-Inclusion, and to offer a theoretical context to explain these factors.
- Conduct an explanatory study to evaluate the e-Inclusion taxonomy.
- Develop a theoretical model and research hypotheses to examine the factors that influence citizen's e-Inclusion in the context of e-government in the UK.
- A quantitative questionnaire survey in the UK must be conducted in order to empirically validate the research model and hypotheses.
- Discuss the theoretical and practical implications of the findings and offer recommendations for future research directions.

1.4 RESEARCH APPROACH

Since the research object in this study is citizens, it can be argued that the survey approach is the most suitable research approach for this study. This is due to issues such as convenience, cost, time and accessibility (Bhattacharjee, 2012; Gilbert, 2001). The type of theories and models used to examine research related to e-Inclusion and e-government have also played a critical role in selecting the approach (See Chapter two). The conceptual model includes a number of research hypotheses that need to be tested before finalising this study. In order to test the hypotheses, collecting quantitative data and statistical analysis is required. Since this research requires hypotheses testing and validation of the conceptual model, a survey is the most appropriate approach to adopt.

Furthermore, the aim of this research is to examine the factors that influence e-Inclusion in the UK. Therefore, the collection of data from large numbers of participants from across the UK is required to get a clear picture of the research. Ethnography which utilises an interview or observation as data collection tools could also be adopted. However, this approach demands huge amounts of financial resources, manpower and time (Cornford and Smithson, 2006). Furthermore, as this is a student research project, there is a restriction to a degree in the financial resources, manpower and time which restricted the ability of the researcher in employing them for the investigation of this research. The main contribution of this study is to provide insights to theory and practice about the factors that are salient to e-Inclusion, and to form relationships between factors such as behavioural intention and actual behaviour. In order to accomplish this, it is significant to collect quantitative data on a number of variables including demographics and to conduct a regression analysis that explains this relationship. This is another reason for adopting the quantitative approach via a survey and collating data.

The data was analysed using tools such as the SPSS and AMOS. The detailed statistical techniques such as evaluating Cronbach's alphas, means, standard deviations, composite reliabilities, factor loading, variance extracted estimates, goodness-of-fit statistics, path coefficients, and variances were all found suitable as far as the hypotheses and model testing were concerned. Further details of the results were obtained by applying the techniques and outcome of measurement and structural models for all alternative models, proposed theoretical model, and emergent model using the data collected; these have been presented in chapter four.

1.5 RESEARCH PROCESS

The following process was designed to facilitate the design and conduct of this research study:

Step 1: to review the extant literatures in both the e-Inclusion and e-government domains;

Step 2: to identify the research gaps that currently exist within the e-Inclusion and e-government domains;

Step 3: to use the results of the literature review, and the gap analysis, to formulate a conceptual framework for the study that would integrate the e-Inclusion and the e-government perspectives;

Step 4: to use the results of the literature review, and the gap analysis, to determine the explicit issues that could be addressed through a citizen's oriented survey of e-Inclusion;

Step 5: to design a questionnaire, and formulate a data collection strategy that would be used to canvas the opinions of citizens (Internet users);

Step 6: to use the research objectives, to guide a detailed statistical analysis of the research data;

Step 7: to identify the research contributions to the existing body of knowledge.

Having outlined the major steps through which the research will be conducted, the structure of the thesis is briefly described in the next section.

1.6 THESIS OUTLINE

The structure and approach used in this thesis followed the methodology that has been described by Phillips and Pugh (2010) for conducting PhD research and consists of four stages, namely a) background theory, b) focal theory, c) data theory, and d) novel contribution. The background focuses on identifying the domain of the problem based on a comprehensive literature review Chapter 2. Focal theory Chapter 3 concentrates on developing a conceptual model. The next category (data theory) deals with issues such as: a) identifying and developing an appropriate research strategy, b) identifying an appropriate research method, and c) developing a research protocol (covered in Chapter 4). The data theory also deals with the process of collecting and analysing data Chapters 5. The last

category is the novel contribution that represents the results of the research Chapters 6 and 7.

Chapter 1: Introduction

This chapter presents a background of the research area, followed by details of the motivation for starting this thesis. This chapter also highlights the aim and objectives of this study; and offers the structure of this thesis.

Chapter 2: Literature Review – Background Theory

This chapter seeks to develop the ideas set out in the introduction and explore how the literature underpins the research and supports the broad aims of the study. Moreover, the chapter aims to demonstrate how the significance of the study is firmly grounded in the existing body of literature, explore the theoretical and practical intersections of e-Inclusion and e-adoption, and to provide a comprehensive review of literature on two different domains; e-Inclusion and e-government.

Chapter 3: Conceptual Model – Focal Theory

Chapter three aims to provide a proposed conceptual model for e-Inclusion. In the first instance, the chapter presents six research gaps identified in this study. Then, the chapter provides the foundation of the proposed model and the justification for combining uses and gratifications theory with decomposed theory of planned behaviour. The chapter then proposes the conceptual model and formulates its hypotheses with the use of pertinent theoretical and empirical justifications.

Chapter 4: Research Methodology – Data Theory

This chapter highlights the methodology design and strategy that help to meet the objectives of this thesis. The chapter describes the research philosophy and the main schools of thought in information systems research, presents the research strategy chosen for the study and explains the rationale behind its selection.

Chapter 5: Findings – Data Theory

This chapter provides the research findings obtained from the survey used for collecting data to examine the citizens' e-Inclusion. The chapter initially presents the results related to the questions asked on the demographic characteristics of the respondents. The descriptive statistics such as means, standard deviations, and Cronbach's alpha for each construct is determined.

Chapter 6: Discussion – Novel Contribution

This chapter discusses and reflects on the results obtained in chapter five. In the first instance, the chapter provides an overview of the research. Then the respondent's demographics are discussed with the level of e-Inclusion gaps model followed by discussion on the validity of constructs and measures used. The chapter evaluates the measurement model using the validity techniques such as convergent and discriminant validities of the constructs and discusses the authenticity of the measures used in the proposed conceptual model. It then presents a detailed discussion on each hypothesis of the proposed conceptual model.

Chapter 7: Conclusions – Novel Contribution

This chapter summarises and concludes the final results of the study. The chapter starts with explaining how the six research gaps (Identified in Chapter three) were addressed and also provides theoretical contribution for this research. Then, implications for policy and practice are presented. The chapter then presents the limitations of this research followed by recommendations for future research.

1.7 CHAPTER SUMMARY

The background of this study, details of the motivation for conducting the research as well as the aim and objectives of the thesis are presented in this chapter. Also, it has presented a brief overview of the research methodology applied in order to meet the research aim and objectives. The parallel between e-government and e-Inclusion research are critically important. It helps to understand how policies, society, organizations, and information technologies come together and it also helps to understand how the e-Inclusion factors impact e-government use. This study is an attempt to explore the theoretical and practical intersections of e-Inclusion and e-adoption (Particularly e-government) and to show how they complement and possibly enrich the potential of e-Inclusion research. Research and practice in these two fields seem to be disjointed and few explicit intersections can be found. The conceptualisations of the e-Inclusion and e-government have important implications for both researchers and policymakers. For researchers, this study can help to understand the complex and recursive relationships between e-Inclusion and e-government. For practice, it can also help to create a more comprehensive strategy that takes into consideration the alignment of e-government initiatives and e-inclusion policies. Therefore, this study will contribute significantly to the knowledge. It will help to fill the research gaps in Europe, particularly in the UK. The next chapter provides the literature review of the elements mentioned above.

CHAPTER 2: LITERATURE REVIEW

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter (chapter one) provided an introduction of the proposed research on e-Inclusion. This chapter seeks to develop the ideas set out in the introduction and explore how the literature underpins the research and supports the broad aims of the study. Moreover, the chapter aims to demonstrate how the significance of the study is firmly grounded in the existing body of literature and to provide a comprehensive review of literature on two different areas that focus on use of Internet technologies: i) e-Inclusion and ii) e-government adoption. This chapter critically reviews the e-Inclusion domain and e-government adoption domain. The rationale for this approach is that combining research on e-Inclusion and e-government has the potential to better understand the factors influencing e-Inclusion since they both share a common theme of Inclusive e-government.

The chapter is structured as follows: initially, section 2.2 presents the reasons behind choosing the particular two domains (e-Inclusion and e-government) for this study. Section 2.3 provides a review of e-Inclusion literature in the European context and the UK in particular, this section consists of seven sub sections; e-Inclusion concepts and fundamentals, the origin of e-Inclusion, the benefits of e-Inclusion, European strategies to promote e-Inclusion, e-Inclusion in the UK, theories and models that are relevant to e-Inclusion, and finally e-Inclusion taxonomy. Section 2.4 provides a review of e-government literature which consists of three sub sections starting with the origin of e-government, the stages of e-government, and theories that are relevant to e-government. Finally, section 2.6 provides a brief summary of the chapter.

2.2 E-INCLUSION AND E-GOVERNMENT

The parallel between e-government and e-Inclusion research are critically important. It helps to understand how policies, society, organizations, and information technologies come together and it also helps to understand how the e-Inclusion factors impact e-government use. This study an attempt to explore the theoretical and practical intersections of e-Inclusion and e-adoption (Particularly e-government) and to show how they complement and possibly enrich the potential of e-Inclusion research (for a similar argument, see Sahraoui, 2007, Helbig et al., 2009). First of all, it is critically importance to distinguish between e-Inclusion

and e-adoption, (e.g. the uptake of ICT tools and services by the population at large). E-Inclusion is mostly concerned with the social impact of relative differences in ICT use between different socioeconomic groups and individuals while e-adoption focuses instead on absolute and average figures of ICT uptake and their economic impact (Kaplan, 2005).

There is no clear consensus about the definition of e-Inclusion or the definition of e-government. Both e-Inclusion and e-government definitions, range from descriptive to value-laden. For example, several terms are synonymous with e-Inclusion such as digital divide and digital inequality (See section 2.3). E-government is also connected to several terms such as e-democracy, digital government, and e-governance. Debates exist as to whether these concepts are the same, different, or complementary (Gil-Garcia and Luna-Reyes, 2006; Andersen and Henriksen, 2005; Grönlund and Horan, 2005; Heeks and Bilur, 2007). For example, Grönlund's and Horan's (2005), state that “all definitions of e-government go beyond services to the citizen to include organisational change and the role of government.” Moreover, Brown (2005) uses a broad conceptualisation positing e-government as “encompassing all government roles and activities shaped by information and communication technologies (ICTs).” Further, Sahraoui (2007) suggests that, “While conceptually there seems to be an agreement over what constitutes e-government, objectives differ between those who use e-government to transform government, where government itself is but one part of a larger value-cycle – the democratic process – and others who long for a fully-automated hence efficient government operation, a government that is mostly oriented toward service delivery.”

Access to digital resources can promote social inclusion and therefore it is important for governments at all levels to support initiatives that promote e-Inclusion (Helsper, 2008). E-government may be able to facilitate greater citizen-participation in government (Shelley et al., 2006). Consequently, in order for e-government to be inclusive, it must reach out to all segments of population with e-services that meet the needs of the digitally disadvantaged. A recent report entitled “Power in people’s hand” released by the UK government in 2009 looks at government services delivery and focuses on empowering citizens by creating personalized services shaped around an individual’s needs, and putting the power in the hand of service user (Cabinet Office website, 2009). Disadvantaged groups as citizens need to be effectively engaged in the e government in order to achieve engaged, enabled and empowered citizen.

Although e-adoption has a positive impact on e-Inclusion as it draws more people and services online, with a series of positive economic benefits, it is not the case with inclusion.

The quantitative growth of the online population may leave out large numbers of groups and individuals. For this reason, e-Inclusion should not be reduced to e-adoption, which would only look at levels of ICT at large and miss the social impact of relative differences in ICT use between various socio-economic groups and individuals (Mancinelli, 2008). Moreover, new social and professional requirements will be needed because of the higher rates of ICT adoption; this may further exclude those who are unable to meet these requirements. As a result, some gaps may deepen between those who make full use of ICT tools and services, and those who do not.

There are many theoretical and empirical difficulties of bringing together e-Inclusion and e-government fields. E-Inclusion and e-government fields seem to be moving toward more complex and sophisticated understandings of each phenomenon and there are important similarities between their philosophical stances and theoretical lenses. However, there are relatively few explicit examples of e-Inclusion research findings in published e-government research and vice versa (Helbig et al., 2009). E-Inclusion issues should be considered as important components in e-government theoretical models, either as assessing the social desirability of information technologies in certain policy domain, affecting the demand of e-government services, or limiting the usefulness of certain government applications.

E-Government researchers use a supply side perspective, they focus on initiatives that create electronic services and opportunities for participation from citizens, businesses, and other stakeholders (Coursey and Norris, 2008; Furuholt and Wahid, 2008; Lee et al., 2011b). In contrast, e-Inclusion researchers study the demand side and how different social groups try to take advantage of these services and of the other uses of information and communication technologies within society. Reddick (2004) finds that “the informational e-citizens [those wanting only information dissemination] are very prevalent, while transaction-based e-citizens are not common.” Moreover, Edmiston (2003) finds that although e-government has expanded access to government information, some racial groups are still left out. Understanding how the different factors affect inequality can help untangle the complexity of why e-government adoption still lags behind. This can better explain how each government is reaching only specific stage of development (For example, interaction stage but not transaction stage).

E-Inclusion and e-government should be seen as complementary social phenomena include both the demand and supply side. Research and practice in these two fields seem to be disjointed and few explicit intersections can be found. The conceptualisations of the e-

Inclusion and e-government have important implications for both researchers and policymakers. For researchers, this study can help to understand the complex and recursive relationships between e-Inclusion and e-government. For practice, it can also help to create a more comprehensive strategy that takes into consideration the alignment of e-government initiatives and e-inclusion policies such as access and identification of individual needs.

The next two sections (section 2.3, and 2.4) present a detailed review on e-inclusion domain and e-government domain.

2.3 DIGITAL INCLUSION/E-INCLUSION

In social sciences, inclusion refers to “a process, de facto and/or de jure, of including people in a given social structure, most often, in society at large. Conversely, social exclusion describes the inability of our society to keep all groups and individuals within reach of what we expected as a society [or] to realize their full potential” (Power and Wilson, 2000, p.1). In addition, there is a close linkage between inclusion and digital inclusion (e-Inclusion). E-Inclusion is essentially about social inclusion in a knowledge society (Kaplan, 2005). Moreover, e-Inclusion is information communication technology (ICT) for inclusion. In Europe, e-Inclusion remains one of the three strategic pillars of the i2010 inclusion strategic plan, which specifies primary goals of growth, employment, and quality of life (Helbig et al., 2009). The European strategy is to ensure that the benefits of the information society can be enjoyed by everyone, including people who are disadvantaged due to limited resources or education, age, gender, ethnicity and by people with disabilities as well as those living in less favoured areas (i2010 European Strategic Plan, 2007). According to Wright and Wadhwa (2010) the term e-Inclusion has its roots in European Commission documents published in 1999 in which it is stated that, the objective of e-Inclusion is to bring every citizen, every school, and every company in Europe online.

From the policy perspective, e-Inclusion concept has been defined as "both inclusive ICT and the use of ICT to achieve wider inclusion objectives". (Riga Ministerial Declaration, 2006). E-Inclusion focuses on the participation of all individuals and communities in all aspects of the Information Society. Consequently the e-Inclusion policy aims to close the gaps in ICT usage and promote the use of ICT to overcome exclusion and improve economic performance, employment opportunities, quality of life, social participation and cohesion.

The structure for the rest of the chapter is as follow. The next seven sub sections introduces a detailed review on e-inclusion including; e-Inclusion concepts and fundamentals, the origin of e-Inclusion, the benefits of e-Inclusion, European strategies to promote e-Inclusion, e-Inclusion in the UK, theories and models that are relevant to e-Inclusion, and finally e-Inclusion taxonomy. The chapter then introduces a literature on e-government adoption. Three sub sections will present the origin of e-government, the development stages for e-government, and some of the theories that are relevant to e-government. The chapter then introduces a section on e-inclusion and e-government. In this section an attempt is made to explore the theoretical and practical intersections of e-Inclusion and e-adoption (Particularly e-government) and to show how they complement and possibly enrich the potential of e-Inclusion research. The chapter ends with giving a summary on the chapter.

2.3.1 E-Inclusion concepts and fundamentals

Definitions of e-Inclusion are important for both practice and research. In practice, if e-Inclusion is understood as multi-faceted then e-Inclusion practices will need to reflect this in order to be successful. On the other hand, in e-Inclusion research there are dangers in viewing e-Inclusion too simplistically (Damarin, 2000, p18). Reviewing an emerging field with poorly-defined boundaries and research styles such as “e-Inclusion” poses special problems. These problems include the selection of literature, where, for example, some authors use the term “digital divide” and others use terms such as “digital exclusion” or “digital inequalities” to describe e-Inclusion (Saebø et al., 2008). Moreover, Saebø et al. (2008) posit that it may be difficult to understand what kind of analysis model should be adopted and from which supporting disciplines the conceptual models should be drawn. Therefore there is a need to define the boundaries of e-Inclusion and identify the core concepts for e-Inclusion in order to develop sophisticated measurements of the relative success of e-Inclusion initiatives that can cater for a wide range of influencing factors.

According to Codagnone, e-Inclusion means “both inclusive ICT and the use of ICT to achieve broader social inclusion objectives and, thus, e-Inclusion is about both inclusive technological innovation and innovative ways to deliver inclusive policies by using ICT” (Codagnone, 2009, p. 5). Early research by DiMaggio and Hargittai (2001) refers to digital inequality when discussing the theme e-Inclusion. From their perspective, digital inequality encompasses five main variables: technical means (inequality of bandwidth), autonomy (whether users log on from home or at work, monitored or unmonitored, during limited times

or at will), skill (knowledge of how to search for or download information), social support (access to advice from more experienced users), and purpose (whether they use the internet for increase of economic productivity, improvement of social capital, or consumption and entertainment). Cullen et al., identify e-Inclusion as a new dimension of social inclusion; they posit that “social inclusion in a knowledge society should focus on people’s empowerment and participation in the knowledge society and economy” (Cullen et al., 2007, p. 12). On the other hand, Kaplan (2005) focuses on the policies that enhance participation in society by means of ICT, he defines e-Inclusion as the inclusion of the citizens within the information society at all levels (social relationships, work, culture, and political) by using technology either directly or indirectly to improve their quality of life. Bentivegna and Guerrieri (2010) posit that e-Inclusion is linked to innovation, whereby, when technological applications change, the connected e-Inclusion processes inevitably change. In this respect, e-Inclusion can be seen as social inclusion in a knowledge society. Therefore, beyond access to ICT tools and services, e-Inclusion focuses on the empowerment and participation of people in the knowledge society and the degree to which ICT contribute to equalizing and promoting participation in society. Given the aforementioned context, the e-Inclusion debate -as it is reflected in the literature- has relied on three core concepts, namely digital divide, social exclusion or social inequalities, and social cohesion. These three concepts will be discussed in the three following sub sections.

2.3.1.1 Digital Divide

In previous studies, the term “digital divide” was considered as a problem of lack of access or lack of usage, but in reality it is broader than just simple access to the internet and covers many different forms of technology and activity (Carter and Bélanger, 2005). This view has recently changed; it has become clear that such approach will not reflect the complexity and multileveled character of digital divide (Barzilai-Nahon, 2006; DiMaggio and Hargittai, 2001; Hargittai, 2004; Selwyn, 2004; Warschauer, 2004). In this respect, there are many reasons behind the call for changing the terminology from digital divide to e-Inclusion. First, the word “divide” brings the idea that digital divide is a static phenomenon that hardly changes with time, which in reality, is clearly not the case. It is a dynamic phenomenon that changes whenever technology changes and it is obvious that technology is changing rapidly. In addition, access, usage, and skills related to ICT are changing continuously (Frissen, 2000). It has also been argued that digital divide is only about focusing on access to online services by the “have” or “have not.” However, as more people are now online, it is more likely that the disparities between accesses to online services caused by material factors have decreased

significantly. For instance, price for computers and other ICT resources have dropped significantly in recent years, and, for most households, the material-access barrier no longer exists (Mariën and Van Audenhove, 2010). Consequently, the remaining fraction of non-adopters of online services are either hard to convince, under skilled, lack the financial resources or simply have other barriers. Another reason is the policies that were successful in increasing internet penetration in the early days may no longer be appropriate, especially in countries where the majority of people are already connected to the internet. The last reason is aging; societies around the world tend to age and senior citizens are often excluded from access to modern information technology (Anderson and Hussey, 2000). Different researchers therefore call for a change in terminology and bring forward the notion of digital inequality or e-Inclusion, which is a more positive connotation (e.g., DiMaggio et al., 2004; Hargittai, 2004; Selwyn, 2004). A study done by Hsieh et al. (2011) investigated how digital inequality can be addressed by using income and education as surrogates to classify individuals into advantaged and disadvantaged socioeconomic groups. The results reveal interesting differences in habitus, cultural capital, and social capital between the socioeconomically advantaged and disadvantaged, both prior to and after using technology (Hsieh et al., 2011; Sipior et al., 2011).

2.3.1.2 Social Exclusion

There is strong evidence that many of those who are affected by digital divide are also socially excluded (Digital Inclusion Team, 2007). Therefore, e-Inclusion and social inclusion are highly correlated (Kaplan, 2005). Social exclusion is subject to many and different definitions. Many definitions focus on the “classification” of target groups excluded or at risk of exclusion made on the basis of factors of disadvantage that can, for example, be economic, physical, geographical, or linked to gender, age, and so on. (Mancinelli, 2008). Further, social exclusion is a social process, built on social inequalities and leading to the marginalization of individuals and groups as regards societal goals. Moreover, Social inequalities (which is related to a series of factors: gender, ethnicity, age, education, employment, income, professional status, housing, family structure, disability, geographical location, etc.) are the basic roots of social exclusion.

Exclusion occurs when individuals or social groups are left behind or do not benefit from equal opportunities to achieve societal goals (Digital Inclusion Team, 2007). According to Wright and Wadhwa (2010), the e-excluded refers to those citizens who do not have access to or do not use the Internet. Most researchers argue that exclusion is a multidimensional

construct and many attempts to simplify the large number of different dimensions proposed by various scholars (such as Anthias, 2001; Chapman et al., 1998; Phipps, 2000). Table 2.1 groups three categories of exclusion based on social identity, social location, or social status.

2.3.1.3 *Social Cohesion*

Social cohesion is often used by the European Commission as an overarching objective, covering various issues related to regional disparities, accession countries, employment strategy, gender equality, poverty, and so on. (Digital Inclusion Team, 2007). There is, however, no accepted definition of the concept of social cohesion among the academic community. Moreover, it cannot be defined in relation to any clear counterpart, such as exclusion/inclusion or equality/inequality (Galabuzi and Teelucksingh, 2010). Social cohesion approach focuses on citizenship practice and social exclusion/inclusion based on community engagement and citizen participation as a key to a form of social integration that acknowledges the multiple identities composing modern nation states and societies (Jenson, 2002; Kymlicka, 1998). Jenson (2002) has argued that social cohesion represents the absence of exclusion and marginalization. In essence, social cohesion is therefore a process and outcome that seeks to actively eliminate social exclusion and build social inclusion (Galabuzi, 2010). According to Bentivegna and Guerrieri (2010), e-Inclusion in present-day societies represents the first step along the road leading to the creation of a new form of social cohesion based on the use of ICTs. Further, they argue that the e-Inclusion process aims not only to increase the number of individuals who are able to improve their quality of life as a result of ICT-related developments but also aims to affect the overall level of a country's economic and social development. This means that e-Inclusion has an impact at the individual level as much as at the social level, and at the micro as much as at the macro level. The origin of e-inclusion and how the terminology changed from digital divide to e-inclusion is presented in the next section (section 2.2.2).

Table 2.1 Mechanisms of exclusion and how people become excluded

Social Identity	Social Location	Social Status
<ul style="list-style-type: none"> • Race • Ethnicity • Religion • Gender • Age 	<ul style="list-style-type: none"> • Remote Areas • Stigmatized Areas • War • Conflict Areas 	<ul style="list-style-type: none"> • Health situation • Migrant Status • Occupation • Level of Education

2.3.2 The origin of e-Inclusion

In the United States (U.S), the term digital divide started as a policy issue when a series of reports released by U.S. federal government. Since then, the digital divide was a common term in the U.S. used widely by bureaucrats, legislators, activists, and scholars since the mid-1990s and it remains an important public policy debate encompassing social, economic, and political issues (Shelley et al., 2006; Selwyn, 2002; Servon, 2002; Compaine, 2001). Digital divide refers to the phenomenon of inequality of access to digital technology and the main focus was on the physical access, it started after the launched of e-government in the second half of 1990s.

In Europe, the term e-Inclusion has its roots in European Commission document published at the end of 1999. E-Inclusion remains one of the three strategic pillars of the i2010 plan for society with overarching goals of growth, employment, and quality of life (Millard, 2006). The European strategy is:

“to ensure that the benefits of the information society can be enjoyed by everyone, including people who are disadvantaged due to limited resources or education, age, gender, ethnicity, etc., [and by] people with disabilities as well as those living in less favoured areas” (i2010 European Strategic Plan, 2007, p.2).

One of the challenges for current researchers is that the Internet studied at the beginning of the 21st century is different from the Internet a decade later. In terms of technological advancements, the last decade was significant for the incredible speed at which ICT have evolved. These changes affect both how ICTs are defined, and how public access to ICTs is understood. They are also reflected in the trends on research about the digital divide and e-Inclusion. At the end of the 90s and begin of 2000s, early literature about internet technologies focuses on stationary computing and the issues of technology access. Consequently, the research from this period is focused on digital divide issues in developed countries and access to Internet was expected to result in promotion of positive change within communities (Roman and Colle, 2002). However, the focus in later literature moved to mobile computing (mobile phones, WIFI, Web 2.0) or stationary facilities with a more constructivist view of technology. In the European context, the research has moved from digital divide to e-Inclusion, to guarantee equal access and effective participation on the various electronic services offered particularly by government agencies (Hargittai, 2004; Livingstone and

Helsper, 2007). Moreover the term change from digital divide to e-Inclusion for the following reasons (See Figure 2.1):

- E-Inclusion refers to the inclusion of the citizens within the information society at all the levels. It means both inclusive ICT and the use of ICT to achieve wider inclusion objectives. E-Inclusion policy, therefore, aims at reducing gaps in ICT usage and promoting the use of ICT to overcome exclusion, and improve economic performance, employment opportunities, quality of life, social participation and cohesion (EC, 2001).
- E-Inclusion is a dynamic concept that changes whenever the technology changes. And it is obvious that the technology is changing rapidly. In addition, access, usage and skills related to ICT are changing continuously (Van Dijk, 2005).
- E-Inclusion is a multi-dimensional divide. It focuses on those who are most disadvantaged and at risk of exclusion such as: elderly people, people with physical or mental disabilities, people with poor education, unemployed people, people with low income, and people who lack skills (Cullen et al., 2007).

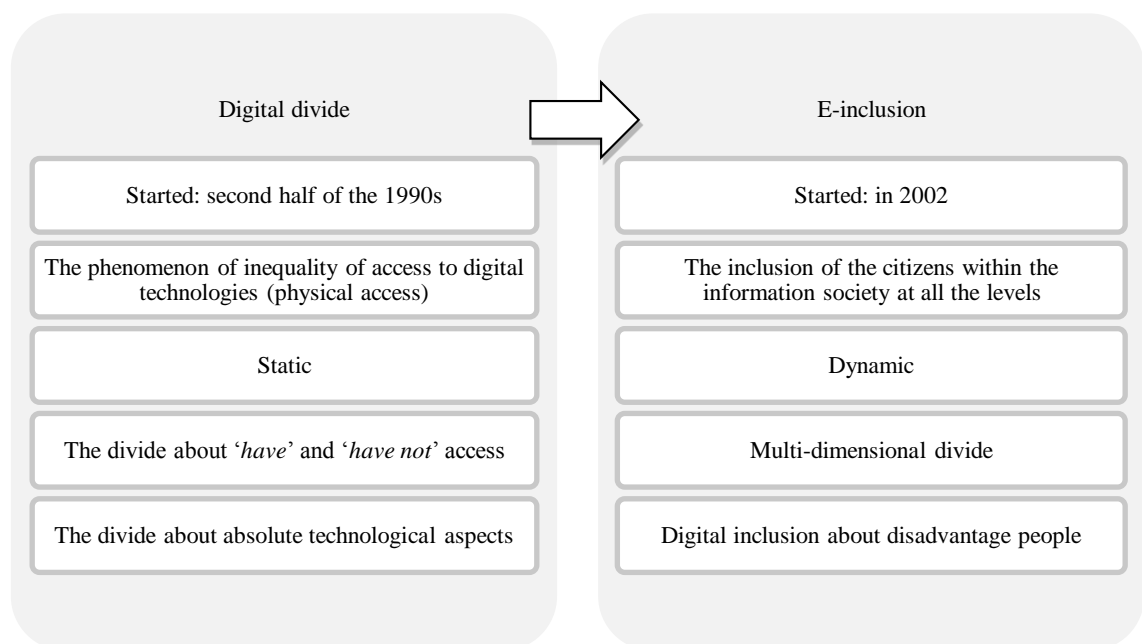


Figure 2.1 Digital divide versus e-Inclusion

A review of the literature reveals several important benefits of ensuring e-inclusion, particularly when public sector organisations introduce electronic services. In the next section

(section 2.2.3) some of these benefits are examined looking at their economic, social and individual contexts.

2.3.3 The benefits of e-Inclusion

The ability to use information and communications technology (ICT) is a prerequisite of living in today's Information Society. It is why policymakers, academics and many others have supported the notion of e-Inclusion, for engaging all citizens in the information society, social justice and ensuring equity in the knowledge society. It is also necessary to realise the potential of the information society for productivity growth and to reduce the cost of social and economic exclusion (European Commission 2007). E-Inclusion benefits can be categorised as economic, social and individual. The three categories will be discussed in the following sub-sections.

2.3.3.1 *Economic benefits*

Among the economic benefits cited for e-Inclusion are the following:

- Initial estimates indicate that benefits from e-Inclusion in the EU could be in the order of €35 to €85 billion over 5 years (The European Commission, 2007).
- Broadband Internet connection is expected to create 1 million jobs and boost the EU's economy by €850 billion between 2006 and 2015 (Fornfeld et al. 2008).
- Increase spending on new telecom infrastructure in areas with a lack of infrastructure, such as less populated areas or remote and isolated rural areas, to enhance the productivity and employment potential of the local economy.
- Development and adoption of advanced broadband services help make businesses and public administration more efficient by enabling organisational innovation and facilitating access to markets.
- An inclusive information society carries large market opportunities for the ICT sector. "The impact on European industry is clearly positive: apart from civil work for networks which has a direct impact on local employment, sales of network equipment will also benefit global European suppliers as well as telecoms or satellite operators. And areas with advanced broadband connections will see an increase in demand for products and services" (European Commission 2009a).
- Universal e-Inclusion will decrease costs in European social and care systems. It makes more effective use of limited resources, multiplying the reach of individuals

(teachers, writers, researchers, scientists, etc.) beyond their normal geographic area of influence.

- E-Inclusion stimulates economic growth by expanding the number of consumers in the electronic marketplace.

2.3.3.2 *Social benefits*

Inequality in the use of digital technologies is potentially a significant new driver of social exclusion, which risks accelerating existing social divides and creating new ones (Digital Britain 2009, p. 59). The full benefits of the digital economy will be relevant to those on lower incomes, older people or those remote from the physical distribution points for public service and other currently excluded communities and groups. Promoting e-Inclusion therefore will minimise this risk.

- E-Inclusion can reduce isolation, as ICT enables users to maintain contact with communities and family. It helps the individual to bridge distances as well as prevents or reduces the risk of psycho-social deterioration and societal exclusion and keep in touch with the society.
- Selwyn (2004, p. 370) states that new technology can be used to “bridge the generation gap”. He links the benefits to either social and self-understanding benefits (e.g., increased access to current affairs and health information), interaction benefits (e.g., increased connectivity and social support), or task-orientated goals (e.g., ICT-assisted work, travel, shopping, and financial management).

2.3.3.3 *Individual benefits*

E-Inclusion is about the use that people make of ICT in order to achieve their goals and enhance their position (regarding job, personal relationships or other aspects), within the social context in which they live. E-Inclusion can help individuals to realise their potential empower them. “More and more technologies are conceived as a means of ‘empowering’ the elderly” (Eggermont et al. 2006, p. 202). E-Inclusion benefits the individuals in:

- Preventing disadvantaged people and groups from being left behind in the development of the information society. Here the focus is on access and basic ICT skills (digital literacy).

- Exploiting new digital opportunities, i.e. reducing existing disadvantages, providing new opportunities in terms of employability, quality of life, access to knowledge, etc.
- Fostering participation and empowerment, i.e. facilitating the use of ICT in order to allow individuals and groups to express themselves, to deepen their social capital, and to participate in democratic processes on a local as well as a wider scale.
- ‘‘ICT may support the social relationships of the elderly and help them fight loneliness; ICT may also enhance their physical condition and help them live independently; and ICT may offer them possibilities to stay mobile, to relax, to learn, and to work, in other words, to fully participate in society’’ (Eggermont et al. 2006, p. 209).
- Learning to use a computer can increase self-confidence, the ability to learn and the memory retention of senior citizens (Ogozalek, 1991).
- Access to the Internet offers the opportunity to increase contact with others, to communicate with new social groups and to pursue old or new interests (Mellor et al. 2008, p. 28).

2.3.4 European strategies on promoting e-Inclusion

Recently, the concept of e-Inclusion has received much attention in Europe. The European Commission and EU Member States have introduced e-Inclusion strategies aimed at reaching out those segments of society who are excluded from using e-services and bringing them into the mainstream of society in the digital economy. Moreover, stemming from the widespread digitization of societies, policy makers have been prompted to tackle issues related to the many forms that digital divide could take. In this respect, e-Inclusion has only recently entered the policy making arena compared to more traditional policies addressing justice, health, economic development, education (EC, 2009). The benefits of mainstreaming the excluded are various as good practices play critical role in the strategies, and examples can be found in e-health, e-learning, e-government, e-Inclusion and other e-domains. Consequently, in Europe, e-Inclusion has become a key policy theme within the European Commission and Member States (Wright and Wadhwa, 2010). For example, in the UK, over £400 million of public money has been invested in projects that promote e-Inclusion or that could be leveraged to do so (Digital Inclusion Team, 2007). In this context, policy and strategy on e-Inclusion in the UK is based on the National Digital Strategy of 2005 which included policies to tackle social exclusion, digital divide and the low uptake of e-government

services by citizens. It includes actions and recommendations to ensure high quality digital and communications infrastructures to promote and protect innovations in creative and media industries and policies to maximize the social and economic benefits from digital technologies. The policy and strategy on e-Inclusion in the UK can therefore be linked to four main documents. The National Digital Strategy of 2005, the Digital Britain report (2009), the National plan for Digital Participation published in 2010 and the Manifesto for a Networked Nation (e-Inclusion factsheet – United Kingdom, 2010).

The first and most important challenge e-Inclusion represents to policy makers is that it appears to represent technological issues and as such facing the risk of being left to policy fields dealing with research and technology or economic development to manage (EC, 2009). However, the technological issues cannot be ruled out as policymakers are actively involved in exploring conditions on how to take prime benefit of the new opportunities that are being offered by ICT (Verdegem and Verhoest, 2008). Further, Helsper (2007) suggested that what policy makers should aim for is ensuring equality of opportunity instead of equality of outcomes. Therefore, public policies must encompass all segments and all categories of population. Kaplan (2005) observes that disadvantaged communities tend to develop creative ways of using ICTs, individually or collectively; on the other hand, technological innovation frequently creates new gaps, and growing use generates new professional and social requirements that are difficult to meet by large parts of the population. A study on Internet usage stated that 60 percent of the population in Norway, Sweden, Austria, the UK, and Spain was found to be either non-users or sporadic users, which reflects a large digital exclusion in Europe (Brandtzæg et al., 2011). The new digital divide, including not only the access divide but the imbalance of Internet usage, threatens the vision of a democratic space in which everyone has an equal opportunity for participation (Pena-Lopez, 2001; Webster, 2006). However, an analysis by the gov3 project (2007) of the published e-Inclusion strategies of over 30 countries shows that these countries share a number of common underlying features: in terms of the outcomes they are trying to accomplish, the objectives they pursue in doing this, and the levers they use to achieve those objectives (gov3 Project, 2007).

In the context of Europe e-Inclusion started when the European Council (2000), in Lisbon in March 2000, set the goal of the European Union's becoming “*the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion*” (EC Lisbon strategy, 2000, p. 74) .

The Council also agreed to make an important impact to overcome poverty and social exclusion by 2010.

In 2001, a significant strategy for e-Inclusion was set. The EC agreed to make a decisive impact on the eradication of poverty and social exclusion by 2010 by setting out specific criteria at the Lisbon meeting in Nice in 2001, together with a requirement that each Member State produce a biennial national action plan on social inclusion. Consequently, the eEurope (2002) action plan reflects a further dominant economic vision behind e-Inclusion. This was built around three major pillars; investment in cheaper, faster, and safer Internet access, investment in people and skills, and simulate Internet uptake and use. Thereafter, the focus of e-Inclusion has shifted towards emphasising on participation and it became more prominent in later European policies. Following a positive reception for eEurope from Member States, in 2003 a ministerial symposium discussed ways to make the Information Society open, inclusive and accessible to all European citizens. A Ministerial declaration, which concluded the symposium, emphasised a commitment to promote networking and exchange of experience. In 2005 e-Inclusion was one of the key priorities of the eEurope 2005 action plan and was regarded with particular importance for the development and take-up of electronic public services. The eEurope 2005 action plan gave emphasis to integrating accessibility criteria into mainstream goods, services and information flows. Complementary to eEurope, the European Commission launched its i2010 strategy in 2005. In this program policy objectives are developed around: (1) creating a single information space; (2) increasing European investments in ICT research and (3) promoting an inclusive European information society. In 2006 the Member States co-ordinate their policies for combating poverty and social exclusion on the basis of a process of policy exchanges and mutual learning known as the open method of coordination (OMC). Their National Action Plans against poverty and social exclusion set out concrete steps to improve access to ICT and the opportunities new technologies can provide (European Commission, 2006). In the same sense, the Riga declaration (2006) identified six themes which the European Commission uses to foster e-Inclusion. Table 2.2 present the Overall objectives of the thematic areas.

Table 2.2 Six themes used by European Commission to foster e-Inclusion

Theme	Description
e-Accessibility	Make ICT accessible to all, meeting a wide spectrum of people's needs, in particular any special needs.
Ageing	Empower older people to fully participate in the economy and society, continue independent lifestyles and enhance their quality of life.
e-Competences	Equip citizens with the knowledge, skills and lifelong learning approach needed to increase social inclusion, employability and enrich their lives.
Socio-Cultural e-Inclusion	Enable minorities, migrants and marginalised young people to fully integrate into communities and participate in society by using ICT.
Geographical e-Inclusion	Increase the social and economic well-being of people in rural, remote and economically disadvantaged areas with the help of ICT.
Inclusive e-Government	Deliver better, more diverse public services for all using ICT while encouraging increased public participation in democracy.

Source: Riga declaration (2006)

In 2007, the European Commission launched its i2010 e-Inclusion Initiative to raise political awareness on e-Inclusion, encourage replication of e-Inclusion success stories throughout Europe, and pave the way for future actions (Wright and Wadhwa, 2010). In 2010, the European Commission launched a new Europe 2020 strategy with the baseline 'A strategy for smart, sustainable and inclusive growth' (European Commission, 2010). Smart growth refers to developing an economy based on knowledge and innovation, sustainable growth aims at promoting a more resource efficient, greener and more competitive while inclusive growth should foster a high-employment economy delivering social and territorial cohesion. Table 2.3 outlines various strategies that have been proposed in the last decade by the European Commission to promote 'e-Inclusion' in the European region.

Table 2.3 European Strategies to Promote e-Inclusion in Europe

Year	Source	Strategies
1999	European policy documents	<ul style="list-style-type: none"> • "The objective of the eEurope initiative is...to bring everyone in Europe—every citizen, every school, and every company— online as quickly as possible".
2000	The European Council meeting Lisbon	<ul style="list-style-type: none"> • Set the goal of the European Union's becoming "the most competitive and dynamic knowledge based economy in the world, capable of the sustainable economic growth with more and better jobs and great social cohesion". • The council agreed to make a decisive impact on the eradication of poverty and social exclusion by 2010.
2001	The European Council meeting Nice	<ul style="list-style-type: none"> • Specific criteria were set out together with a requirement that each Member State produce a biennial national action plan on social inclusion.
2002	eEurope	<p>eEurope sets a number of targets on e-accessibility:</p> <ul style="list-style-type: none"> • Investment in cheaper, faster, and safer Internet access. • Investment in people and skills. • Stimulate Internet uptake and use.
2003	Symposium on e-Inclusion	<ul style="list-style-type: none"> • Ministerial symposium on e-Inclusion was organized. • Ministers discussed ways to make the Information Society open, inclusive and accessible to all European citizens. • The Ministerial declaration, which concluded the symposium, emphasised a commitment to promote networking and exchange of experience (which in itself is a good practice).
2005	eEurope	<ul style="list-style-type: none"> • E-Inclusion was one of the key priorities of the eEurope action plan. • It was regarded of particular importance for the development and take-up of electronic public services. • eEurope action plan gave emphasis to integrating accessibility criteria into mainstream goods, services and information flows.

2005	European Commission	EC launched its i2010 strategy, its objectives were: <ul style="list-style-type: none"> • Creating a single information space. • Increasing EU investment in ICT research. • Promoting an inclusive European information society.
2006	European Commission	<ul style="list-style-type: none"> • Member States co-ordinate their policies for combating poverty and social exclusion on the basis of a process of policy exchanges and mutual learning known as the open method of coordination (OMC). • Their National Action Plans against poverty and social exclusion set out concrete steps to improve access to ICT and the opportunities new technologies can provide.
2007	European Commission	<ul style="list-style-type: none"> • The European Commission launched its i2010 initiative. • E-Inclusion Initiative to raise political awareness on e-Inclusion, encourages replication of e-Inclusion success stories throughout the EU, and paves the way for future actions.
2010	European Commission	<ul style="list-style-type: none"> • EC launched a new Europe 2020 strategy with the baseline, “A strategy for smart, sustainable and inclusive growth” These three mutually reinforcing priorities should help the EU and the Member States deliver high levels of employment, productivity and social cohesion. Concretely, the Union has set five ambitious objectives - on employment, innovation, education, social inclusion and climate/energy.
2012	Digital Volunteering Programme	<ul style="list-style-type: none"> • Launched in January 2012, it channels various forms of voluntary participation in order to combat digital and social exclusion. This volunteering programme complements the Galician authorities' effort to build an Information Society for all.

It is clear that the above strategies are very much focused on the public sector and policies that impact citizens' inclusion of the services that are offered by the public sector. In particular, the baseline of the policy discourse was focused on “*an information society for all*” since the implementation of the eEurope program (Verdegem, 2011). Drawing from the above strategies in table 2.3 and aforementioned literature, it can be seen that it is important to study the influence that e-Inclusion has on citizens' adoption of e-services.

2.3.5 E-Inclusion in the UK

Current e-Inclusion policy and strategy in the UK is based on four documents (UK e-Inclusion factsheet, 2010). The first one is the National Digital Strategy of 2005, which included policies tackling social exclusion, the persistent digital divide and the low uptake of e-government services by citizens. The second document published in 2009, the Digital Britain Report which also introduced the term digital participation as a goal towards achieving e-Inclusion. The third document is the National Plan for Digital Participation, published in March 2010. The last document is Manifesto for a Networked Nation, set forward by government in July 2010. The Prime Minister David Cameron and the 'UK Digital Champion' (for e-Inclusion) Lane Fox launched the Manifesto for a Networked Nation, pledging to get online everyone in the UK who is not yet online by 2012. The report estimated that around 10 million people in the UK do not have access to the Internet, or have never used it, and that there are enormous benefits to citizens from Internet use. The campaign did not achieve the goal of getting everyone in the UK online and on April 2012, Race Online 2012 handed over

the baton to Go ON UK, a new cross-sector partnership. Go ON UK will have a broader remit than Race Online 2012, focussing not just on getting people online, but on ensuring every individual, organisation and community can enjoy the benefits of the Internet. Table 2.4 presents percent of individual never used the Internet from 2009-2013.

Table 2.4 Individuals never used the Internet in the UK

	2009	2010	2011	2012	2013
Individuals never use the Internet	15%	13%	11%	10%	8%

Information society indicators in the UK show that, while the overall penetration of ICT has grown between 2009 and 2013, citizen's adoption and inclusion for some online activities remain the same and in some of them even decreased (See Table 2.3). In 2013, more people than ever before used the Internet for reading newspapers or magazines (55%), to access their bank accounts (54%), to seek health information (43%) or shop online (72%). However, using the Internet for looking for a job or sending a job application, seeking information with the purpose of learning, and interaction with public authorities either decreased or remain the same. In 2013, the most popular reason for accessing a public authority or service website was to obtain information which is approximately 33%. Table 2.5 explores provides information in what adults use the Internet for in the UK and how homes in the UK connected to the Internet from 2009 to 2013.

Table 2.5 Information Society Indicators in the UK

	2009	2010	2011	2012	2013
households with Internet access	77 %	80%	83%	87%	88%
households with broadband connection	69%	NA	80%	86%	87%
Individuals regularly using the Internet	76%	80%	81%	84%	87%
Individuals using the Internet for uploading self-created content	40%	38%	NA	35%	NA
individuals using the Internet for reading online newspapers/magazines	43 %	51%	53%	47%	55%
Individuals using the Internet for Internet purchasing	61 %	62%	66%	67%	72%
Individuals using the Internet for seeking health-related information	34 %	39%	42%	NA	43%
Individuals using the Internet for looking for a job or sending a job application	25 %	26%	30%	NA	24%
Individuals using the Internet for doing an online course	7 %	8%	7%	NA	9%
Individuals using the Internet for seeking information with the purpose of learning	31 %	32%	36%	NA	31%
Individuals using the Internet for e-banking	45%	45%	NA	52%	54%
Individuals using the Internet for interaction with public authorities	48%	48%	40%	43%	41%
Individuals using the Internet for interaction with public authorities obtaining information	40%	39%	28%	33%	33%
Individuals using the Internet for interaction with public authorities downloading forms	28%	26%	22%	27%	22%
Individuals using the Internet for interaction with public authorities returning filled forms	23%	23%	23%	26%	22%
Individuals submitting income tax declaration via websites of public authorities	NA	NA	NA	NA	7%

Source: Eurostat, UK Office for National Statistics "Internet Access - Households and Individuals, 2009, 2010, 2011, 2012, and 2013"

High usage rates are essential and prerequisite for successful public e-services. While 97 percent of public services were available online in the UK in 2010, this has not resulted in greater use of these services by citizens (Seybert, 2011). Although 88 percent of UK households have Internet access and 72 percent of individuals in UK had purchased or ordered online (EC, 2010), interaction with public authorities did not reach more than percent for obtaining information, 22 percent for downloading forms, and 22 percent for returning filled forms by 2013 (Eurostat and UK office for national statistics). This gap will continue to widen with the government's plan to have its services becoming "digital by default", meaning a group that needs public services the most could soon be struggling to enjoy the same ease of access as others with less need (Guardian Professional, 2011). There are several factors influencing the usage of e-government by citizens, (e.g. costs, trust, lack of skills, lack of access and disinterest). However, these factors are not all exclusive to e-government, some address the participation in information society in general (Becker et al., 2008).

Becker et al. (2008) has distinguished different steps of participation in the information society and analysed the gaps between these steps. Drawing from Becker's approach, three

gaps have been identified in the UK (See Figure 2.2), based on the latest available data, for the level of citizens' e-Inclusion (UK e-government fact sheet, 2010; Eurostat, 2010). The first gap in the figure is the gap between the total population and the Internet users, 17 percent of the UK population never used the Internet. The second gap is between the Internet users and the e-commerce users, while 83 percent of the total population have used the Internet only 60 percent of the population have used it for buying or ordering goods. The third gap is between the e-commerce users and the e-government users; while 60 percent of the population used e-commerce only 40 percent of them have used it for e-government services (See Figure 2.2). Since the data for the UK e-government was not available, the fourth gap between people who use e-government for information and those who use e-government for transactions was omitted. Although Becker's approach was successful in identifying the gaps for the level of e-Inclusion between citizens, the approach could not interpret the reasons for these gaps. We conclude that e-government use is the last level of e-Inclusion based on this approach, and finding the factors that determine and influence people to use e-government will help to understand the factors that influence e-Inclusion and better explain possible inclusion gaps. Consequently, a theoretical basis is needed to determine the factors that could better explain possible e-Inclusion gaps.

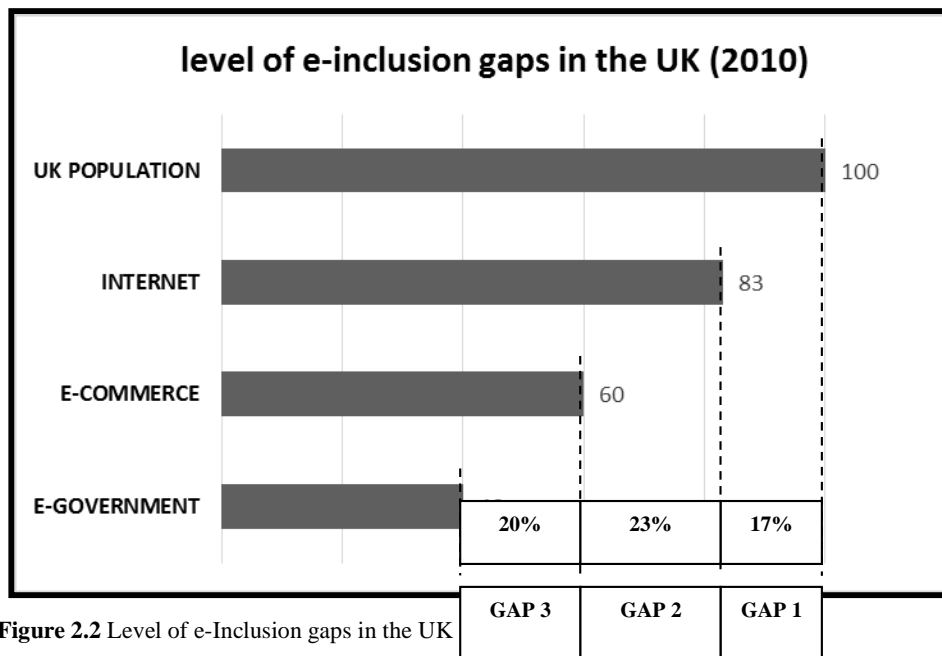


Figure 2.2 Level of e-Inclusion gaps in the UK

2.3.6 Theories and models that are relevant to e-Inclusion

Van Dijk (2006) argues rather forcefully that there has been a lack of theorisation in e-Inclusion research. Moreover, e-Inclusion research has remained at a descriptive level, underlining the demographics of income, education, age, sex, and ethnicity. Consequently, there is a need for deeper research to find out the social, cultural, and psychological causes behind the inequality of access. Many researchers have argued that e-Inclusion has multidimensional constructs, which adds more complexity when attempting to simplify the concept (e.g. Cullen et al., 2007; Codagnone, 2009; Wright and Wadhwa, 2010). A number of studies have also attempted to conceptualise e-Inclusion (see, for example, Becker et al., 2008; Bentivegna and Guerrieri, 2010; Hargittai, 2004; Hargittai and Hinnant, 2008; Helsper, 2008; Helsper and Eynon, 2010; Mancinelli, 2008; Almuwil et al., 2011; Weerakkody et al., 2012). In order to examine the impact of e-Inclusion, it is important to identify appropriate assessments and indicative measures. At present, most existing indicators are still centred on broad measurements such as access to ICTs and Internet connection, availability and level of digital literacy skills and ICT usage rates. Although such indicators on e-access, e-skills and e-usage are useful for national benchmarks and trans-national comparisons, they fail to present an integrated view of the real life worlds of citizens (Advisory Government and Public Sector, 2009). However, it has become increasingly evident that such indicators are less able to shed light on the necessary contingency approach to social inclusion and e-Inclusion (Cullen et al., 2007). Further, greater elaboration and refinement of variables is needed in the assessment of e-Inclusion. Crucially, there is a need for strengthening the compound indexing on multiple deprivations, since e-Inclusion is multi-dimensional (ibid). A review of literature indicates that there are a few relevant frameworks that are focused on e-Inclusion (E-Inclusion Team, 2007). While they are useful for evaluating the impact of electronic services on general populations, they tend to be less applicable for evaluating the needs of disadvantaged people with more complex needs (ibid). Bradbrook and Fisher (2004) advocate the '5 Cs' of e-Inclusion. It emphasises the complexity of e-Inclusion and could also be termed 'continuity' which is one of the '5 Cs'. This framework represents five key issues of e-Inclusion namely; Connection, Capability, Content, Confidence and Continuity. On the other hand, Dijk (1999) was one of the first academics to point out the multi-dimensional aspect of digital divide. He conceptualized access to a fourfold unit that comprises four barriers namely; motivational access, material access, skills access and usage access. The first, motivational access refers to the mental barriers that prevent people from using ICT. The second, material access refers to the traditional notion of access and is about the actual

possession of ICT. The third, usage access points out the differences that occur at the level of using ICT and the exclusion mechanisms that accompany this usage. The fourth, skills access which refers to the lack of digital skills as a main barrier for usage. Dijk's (1999) categorization is still valid today and facilitates identifying and clarifying the complexity of today's digital and social exclusion mechanisms (Mariën and Van Audenhove, 2010). Another framework for digital resources was developed by Helsper (2008) focusing on digital resources that are grouped into four broad categories namely; ICT access, skills, attitudes and extent of engagement with technologies. Moreover, the framework by Verdegem and Verhoest (2008) explains the relation between the socio-demographic and socio-economic characteristics of non-users or the disadvantaged group. The advantage of this method is that groups of individuals with relatively homogeneous Access, Skills and Attitudes (ASA)-profile can easily be identified and reached by policy makers. Homogeneity, in this context, means that people share the same characteristics in terms of the most important resources that determine the use of ICT and they are access, skills and attitudes (ASA). A specific combination of conditions in terms of access to ICT, skills to master the devices and attitudes toward the technology is then called an "ASA-profile" (Verdegem and Verhoest, 2008). Finally, Bentivegna and Guerrieri (2010) presented an e-Inclusion Index which is a multi-focus approach. The main objective of this index is to track progress in the development of ICTs and to monitor and capture the level of advancement of e-Inclusion. The models and theories that have been utilised in various e-Inclusion frameworks are summarised in table 2.6.

2.3.7 E-Inclusion Taxonomy

A review of the literature and secondary policy documents reveal that e-Inclusion is about providing a technology platform to support communities and citizens in their fight against poverty, disease, and exclusion and at the same time facilitate many public sector services such as health welfare and education. Early steps in exploiting ICTs to enable such services include providing access by putting the necessary infrastructure in place, including basic electronic communication services. A number of studies in recent years have argued that e-Inclusion has multidimensional constructs, which adds more complexity when attempting to simplify the concept (e.g. Cullen et al., 2007; Codagnone, 2009; Wright and Wadhwa, 2010). Various researchers have also attempted to conceptualise and define e-Inclusion (see, for

Table 2.6 Various Theories and Models Adopted for e-Inclusion

Theories & Models	Description	Reference
1 The '5 Cs' of e-Inclusion	Referred to as the ladder model, this framework emphasises the complexity of e-Inclusion by identifying five criteria that influence e-Inclusion: <ul style="list-style-type: none"> • Connectivity(access) • Capability(skills) • Content • Confidence (self-efficacy) • Continuity 	Bradbrook and Fisher (2004)
2 A cumulative and recursive model of successive kinds of access to digital technologies	Dijk (1999) was one of the first researchers to point out the multifaceted aspect of the digital divide. He conceptualized access to a fourfold unit that comprises 4 barriers: <ul style="list-style-type: none"> • Motivational Access: limited take up of ICT, lack of interest and negative attitude. • Material Access: Lack of actual ICT material • Skills Access: Lack of digital skills, low user friendliness of ICT, lack of education & social support networks • Usage Access: Lack of usage opportunities & the uneven spread of this opportunities across societies 	Van Dijk (1999; 2005)
3 Framework of digital resources	This frameworks look s at digital disengagement as determined by either exclusion, factors and barriers that are not easy for an individual to overcome quickly themselves (for example, low income and poor infrastructure availability) or by digital choice (that is if the person chooses not to use technologies even though they have the capabilities to do so). Digital resources are grouped into four broad categories: <ul style="list-style-type: none"> • ICT Access • Skills • Attitudes • Extent of engagement with technologies 	Helsper (2008)
4 The 'ASA-profile' & relative utility theory	This approach is articulated around the concept of 'relative utility'. It attempts to set up effective e-Inclusion measures. The advantage of this method is that groups of individuals with relatively homogeneous ASA-profile can easily be identified and reached by policy makers. A specific offering can then be proposed to these groups, taking into account the specificities of their ASA-profile and socio-economic background. ASA refers to: <ul style="list-style-type: none"> • Access: access to ICT • Skills: skills to master the devices • Attitude: attitude toward to technology 	Verdegem and Verhoest, (2008)
5 E-Inclusion Index - multi focus approach	The main objectives of the index are to track progress in the development of ICTs and to monitor and capture the level of advancement of e-Inclusion. The analytical framework underlying the construction of the e-Inclusion index is structured into three components (dimensions of the general concept: access, usage, impact on quality of life) and into twelve sub-indexes: <ul style="list-style-type: none"> • Internet access: network, affordability, availability and quality. • Internet usage: Autonomy, intensity, skills. • Internet impact: eEducation, eHealth, eLabour, eGovernment, eEconomic, eCulture and communication. 	Bentivegna and Guerrieri (2010)

example, Becker et al., 2008; Bentivegna and Guerrieri, 2010; Hargittai, 2004; Hargittai and Hinnant, 2008; Helsper, 2008; Helsper and Eynon, 2010; Mancinelli, 2008).

Van Dijk (1999, 2005, 2006) was one of the first academics to point out the multi-dimensional aspect of digital divide and his categorisation is still valid today and facilitates identifying and clarifying the complexity of today's digital and social exclusion mechanisms(See Figure 2.3). In this model material access is preceded by motivational access and succeeded by skills access and usage access. When the full process of technology appropriation is completed, according to this ideal scheme, a new innovation arrives and the process starts again, wholly or partly. Van Dijk argues that there is a lack of conceptual definition and explanation for e-

Inclusion. He discussed all concepts that used to try to map the depth of e-Inclusion. He concluded that better definitions of concepts, backed by theory which can be operationalised for empirical research would advance the research field considerably. Access and its parameters, skills, and use were the three main concepts that Van Dijk discussed. Some researchers have attempted to expand understanding of these concepts in order to strengthen the utility of a conceptual framework that attempts to map e-Inclusion.

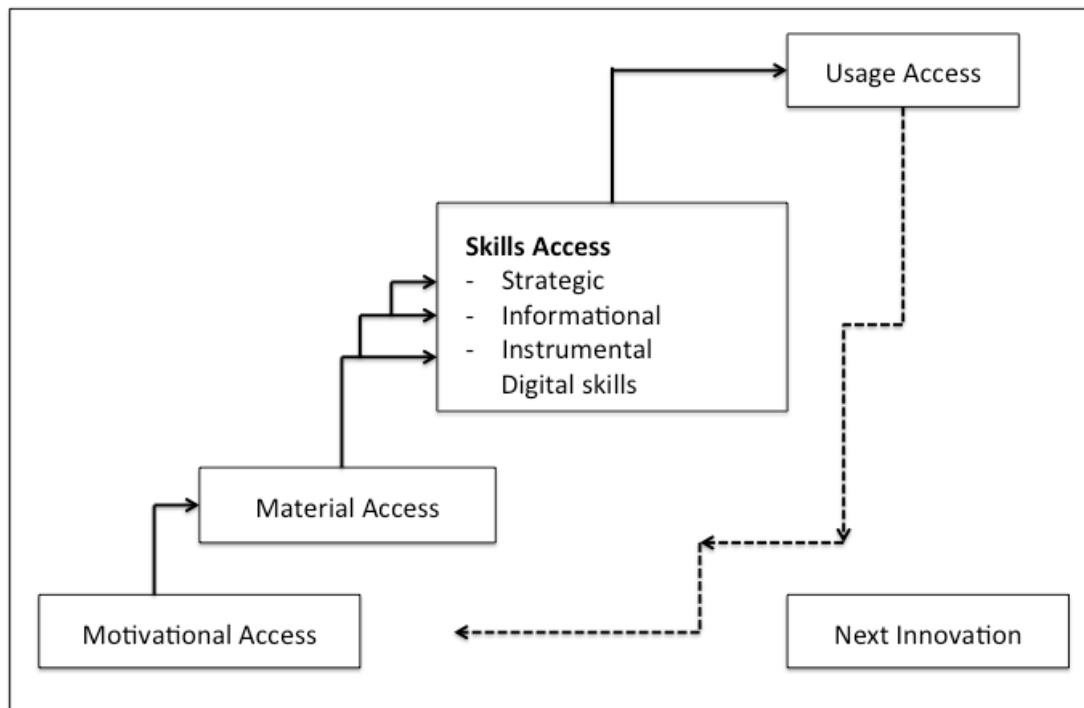


Figure 2.3 A cumulative and recursive model of successive kinds of access to digital technologies.
Source: van Dijk (2005), p.22.

For example, Hassani (2006) discussed access in his study. He argues that location is an important variable that matters in terms of speed of connection, the privacy and freedom that different locations afford individuals. Although home access is strongly associated with positive outcomes such as “enhanced well-being”, individuals who are able to access the Internet in several different locations benefit the most. This links to the work by Dutta-Bergman (2005) who discussed skills in his study. He suggests that community access to the Internet contributes to the social capital of individuals in terms of their satisfaction with community life. In addition, Hanafizadeh et al. (2009) suggest a method for measuring “e-readiness” of users. They argue that the focus should move from traditional access-oriented concepts to the “e-readiness” of users. Broos and Roe (2006) argue that psychological concepts (e.g. self-efficacy and locus of control) might help to explain differential adoption and use of ICT between males and females. Freese et al. (2006) discuss the concept of use in

more detail in their study. They believe that the availability of social support is critical, especially for some older adults. Hence, there is probably a greater need to strengthen the conceptual framework that it used to scope the impact of e-Inclusion on individuals and communities. In order to measure and evaluate the impact of e-Inclusion initiatives, e-Inclusion concepts need to be clearly defined, and the concepts that maps e-Inclusion (e.g. access, skills, use) need to be clearly link to the concepts that maps the impact of e-Inclusion within the framework. Consequently, there will be great opportunities for data linkage (Longley 2003; Becta 2008) and a full picture of e-Inclusion can be provided.

Drawing from the aforementioned literature, six e-Inclusion dimensions have been identified as key inhibitors for e-Inclusion namely; demographical, economic, social, cultural, political, and infrastructural. Notably, these themes emerged in the literature from actual citizens' behaviours in their day-to-day life situations while using electronic-government services. These six dimensions that influence citizens e-Inclusion in the public sector services are presented in the following sub sections.

2.3.7.1 Demographical Dimension

The literature have confirmed the determining effects of demographic, socioeconomic, generational, and geographical differences in adopting technology (Becker et al., 2008; Belanger and Carter, 2006; Goldfinch et al., 2009; McNeal et al., 2008; Mossberger et al., 2003; Neu et al., 1999; Niehaves and Becker, 2008; Niehaves and Plattfaut, 2010; Reddick, 2005; Sipior et al., 2011; Tolbert and McNeal, 2003; Welch et al., 2005). Some empirical examinations found for example e-government usage to be stratified by gender and ethnicity (Goldfinch et al., 2009; Belanger and Carter, 2009; Bimber, 1999; Edmiston, 2003; Losh, 2003). Moreover, elderly people, especially the over 50s, adopt technology less than other younger age groups (Helsper, 2008; Mordini et al., 2009). Given the fact that we are living in an aging community and people are living longer and healthier lives, there is a danger of excluding the ageing population from adopting technology (Kinsella and He, 2009). Further, other studies have identified that men are more likely to adopt technology than women (Mossberger et al., 2003). Therefore, the disparity of adoption can be further compounded in likelihood to use technology (Mordini et al., 2009) and as a result, women will be more in danger than men of being excluded. Moreover, scholars such as Helsper (2008), Helsper and Eynon (2010), Heim et al. (2007), and Brandtzæg et al. (2011) suggest that family structure, such as having children in the household, may increase the probability that the household will

acquire computers and internet access. Similarly, ethnic groups often depend on group-wide action and coherence rather than purely individual incentives (O'Sullivan et al., 2010). The proposed demographic dimension was decomposed into four factors; age, gender, family structure, and ethnicity.

2.3.7.2 Economic Dimension

Another societal challenge that has been identified in the literature relates to economic aspects. While the affordability and cost of ICT equipment in different European countries vary, the discrepancy of income and employment levels among citizens across European countries can also have an impact. This is further compounded by the employment status of individuals (Agerwal et al., 2009; Brown and Venkatesh, 2005). Policy makers have argued that e-Inclusion initiatives can create job opportunities for the unemployed through access to a variety of resources (Digital Inclusion Team, 2007). Simultaneously, it could also enhance the employment status for those already employed and help to increase their income (ibid). The proposed economical dimension was decomposed into three factors; employment, income and cost.

2.3.7.3 Social Dimension

Access to ICT and the internet, for example, provides a platform for enabling and encouraging citizens to re-engage with learning, increasing their skills and qualifications. Further, e-Inclusion initiatives can enable citizens with special needs and/or the elderly to lead independent lifestyles. A prime example is the delivery of electronic health services; this not only reduces delivery costs for the government but also improves accessibility of essential services for citizens. However, studies have also raised concern regarding the adoption of such e-services, due to issues such as trust and motivation (Nam, 2014; Belanger and Carter, 2008; Carter and Belanger, 2005; Carter and Weerakkody, 2008; Wang and Emurian, 2005; Goldfinch et al., 2009; Horsburgh et al., 2011; Hung et al., 2006; McNeal et al., 2008; Parent, Vandebeek et al., 2005; Reddick, 2005a; Rufin et al., 2012; Sang et al., 2009; Tolbert and Mossberger, 2006; Warkentin et al., 2002; Welch et al., 2005). The proposed social dimension was decomposed into four factors; education, motivation, health, and lifestyle.

2.3.7.4 Culture Dimension

Verdegem (2011), Helsper (2008), Helsper and Eynon, (2010) posit that in certain ethnic minority groups, cultural traditions and norms may prevent these groups from adopting technology and new ways of engagement with public services (i.e., some may prefer face-to-face communication to e-Services). Developing the required ICT skills requires investment in both time and effort to cope with use of new technologies (Ferro et al., 2011; Hargittai, 2002, 2009; Warschauer, 2004). The proposed cultural dimension was decomposed into four factors; language, knowledge, tradition, and skills.

2.3.7.5 Political Dimension

Within the European context, studies have positioned political support in the core of the European Strategies for e-Inclusion (European Commission 2004; Kaplan, 2005). Moreover, information accessibility and availability gives the opportunity for citizens to be included as part of their society by knowing their rights. This dimension was excluded and was measured through the external influence for the government support and its effect on the citizens' adoption and inclusion. The proposed political dimension was decomposed into three factors; government support, accessible information, and legislations and regulations.

2.3.7.6 Infrastructure Dimension

Brandtzæg et al. (2011) and Mordini et al. (2009) argue that poor access to an appropriate technical infrastructure and facilities isolates citizens from benefiting from technology and widens e-exclusion. Further, the development of wireless technology can also enable seniors/special needs citizens to be more independent through the use of home based devices such as home-based health, wellness measurement and monitoring, location technology, emergency calls, and alarm systems (Cullen et al., 2007). Moreover, multi-channels such as mobile phones, digital TV, and kiosks allow access to a wider variety of digital content that is now widely available to citizens. Ultimately, such infrastructures will maximize benefits and convenience for all citizens and enable them to engage actively, so that no one excluded in the information society. The proposed infrastructure dimension was decomposed into three factors; resources, access, and urbanisation.

In order to address the above research gaps from a theoretical angle, this chapter has contributed by conceptualizing e-Inclusion through a review and synthesis of the limited normative sources available and policy documents. In this respect, the more traditional definitions of digital divide,

social exclusion, and social cohesion were examined to relate and draw from. This resulted in the formulation of a conceptual taxonomy of the key demographic, social, cultural, infrastructural, and economic factors that can influence e-Inclusion (See Table 2.7), political dimension was not considered in this study due to time and resource constraints. Indeed, the theoretical contribution of this research was focused on extending the current boundaries of knowledge in the area of e-Inclusion. It was found that the lack of conceptual definitions and theoretical frameworks for e-Inclusion has prevented the development of reliable measurement and identification of specific factors that influence e-Inclusion. To this end, it is hoped that the developed taxonomy offers greater elaboration and refinement of the variables that can be used to assess e-Inclusion and will thus contribute towards addressing these gaps in the literature and current e-Inclusion research.

These findings from the literature were crucial to understanding and shaping the research scope of e-Inclusion which at the same time, has been instrumental for building the research model, presents set of hypotheses and create the survey of e-Inclusion.

The aforementioned section provides a detailed review on e-inclusion domain, the next section (section 2.3) presents a literature review on another domain which is e-government. Section 2.3 consists of three sub sections includes; the origin of e-government, the stages of e-government, and theories that are relevant to e-government.

Table 2.7 Conceptual Taxonomy of Factors Influencing E-Inclusion

	FACTORS	Key from table 2.6	DESCRIPTION	KEY FINDING – the UK context	REFERENCES
DEMOGRAPHIC	Age	Usage Continuity	Grouped from young people aged 15-24 to senior citizens over 65 In this factor a generational divide is identified between older and younger Internet users, where the older users are often found to lag behind, both in usage and access. Senior citizens are often excluded from modern technology. Children and young people who have been online for longer, and who use the internet more often, take up more online opportunities. Similarly, they have greater online skills and self-efficacy.	<ul style="list-style-type: none"> 1 million people in the UK aged 15-24 do not have access to computers and Internet for schoolwork. 62% of the adults who had never accessed the Internet (6.4 million) were over the age of 65. It is estimated that in 2025, 10% of young people in the 65 and over age group will still not be using the Internet. 	The digital Economy Research Hub-UK; Eastin and LaRose (2000); Karahasanovic´ et al. (2009)
	Marital Status	Access Usage Connectivity	Grouped as single, married, cohabiting, divorced, widowed and with/without children It is a common opinion that having children in the household increases the probability that the household will acquire computers and Internet access. Many lone parents accessing advice have complicated cases and situations and for that reason prefer to receive information and advice face-to-face rather than from a website.	<ul style="list-style-type: none"> 80 percent of lone parent families have access to the Internet at home compared to 97 percent of two parent families. Many lone parents do not have access to the internet. 	Technical report-European Commission (2006); Helsper (2008)
	Race & Ethnicity	Confidence Attitude	Grouped into Asian, African, Caribbean, white, other This factor explains that there is a relationship between poverty, race and immigration status. So, this group suffers from multiple deprivations. 21.5% of Black and Minority Ethnic (BME) people live in deprived areas compared to 8.8% of the white population. On average 39% of the people in these areas experience income deprivation compared to a national average of 14 per cent.	<ul style="list-style-type: none"> 29% of households in deprived areas are surviving on incomes below £10,000. 12% of all children live in deprived areas and just over half of these live in households that are income deprived. 	Digital Inclusion Team (2007); Stewart (2010)
ECONOMIC	Employment	Access Usage Continuity Connectivity	Grouped into employed, unemployed, retired, home caretaker, students and other. This factor explains how e-Inclusion improves employment outcomes: as individuals enhance their qualifications this improves their earnings and/or their probability of finding employment.	<ul style="list-style-type: none"> People with ICT skills earn between 3% and 10% more than people without such skills. If the currently digitally excluded employed people got online, each of them would increase their earnings by an average of over £8,300 in their lifetime and deliver between £560 million and £1,680 million of overall economic benefit. 	Technical report-European Commission (2006)
	Income	Access Continuity Connectivity	Grouped into up to 12,000;12,500 to 25,000; 25,000to 30,000; 30,000to 50,000; over 50,000 Research shows that economic wealth, represented by income per capita, is the biggest single factor explaining the disparities in computer and Internet penetration rates.	<ul style="list-style-type: none"> People living in 3.6 million low income households which are digitally excluded are missing out on annual savings of over £1 billion a year from shopping and paying bills online. People earning over £40,000 per annum, were more than twice as likely to be digitally included as those earning less than £12,500 per annum. 	The Internet in Britain (2009); Chinn and Fairlie (2007; 2010)

	Urbanization	Access Connectivity	Grouped into rural or urban areas, isolation, remote areas. Rural areas present a more difficult set of challenges compared to city centres in term of access to ICTs. This is because greater distances and lower population densities stress the limits of communications technologies. In this respect, e-Inclusion can facilitate peoples' lives in rural areas.	<ul style="list-style-type: none"> There are approximately 4.9m people living in the 10% most deprived places in England. 	Digital Inclusion Team (2007)
SOCIAL	Education	Skills Capabilities Continuity	Grouped into un-educated, primary, secondary, sixth form, technical college, further education, undergraduate, graduate, postgraduate, other Access to digital technologies improves educational performance. For example, as individuals enhance their qualifications, this improves their earnings and/or their probability of finding employment.	<ul style="list-style-type: none"> If the 1.6 million children who live in families (with no Internet access) got online at home, it could boost their total lifetime earnings by over £10 billion. 	ONS (2009); The Internet in Britain (2009); Helsper (2009)
	Health	Access Connectivity	Grouped into physical disability and/or mental disability Greater e-Inclusion has the potential to improve health and well-being outcomes through access to improved health information and health services.	<ul style="list-style-type: none"> It is estimated that there are over 10 million disabled individuals in Britain alone. Among the disabled population, 59% do not have home access, compared with just 29% of the general population. 	The digital economy research hub – UK; Helsper (2008)
	Lifestyle	Confidence Attitude Usage	Grouped into social status of using the Internet Online social networks, email and other online communications tools offer opportunities for interactions with families, friends, and communities of interest. To ensure effective adoption, initiatives need to relate to people's daily reality and should therefore be integrated into the existing social and cultural life of people.	<ul style="list-style-type: none"> Advanced or Networking uses of the Internet are conducted by 8% of the population (11% of Internet users). Social networking sites alone were attracting an average of 165 million unique visitors a month 	Mariën and Van Audenhove (2010); Helsper (2008); Verdegem (2011)
		Language	Skills Capabilities	Grouped into language proficiency, immigration and ethnic status Language barriers experienced by immigrants and refugees, discrimination. Language barriers can often prevent communities from accessing the relevant information they need to be involved and included in the local community.	<ul style="list-style-type: none"> Over 8 million people have literacy problems/learning difficulties Low literacy levels: only 52% of UK adults with no qualifications have internet access at home, compared with 78% even for those leaving school with basic levels of qualification (GCSE grade G or above).
CULTURAL					

	Knowledge	Skills	Grouped into levels of knowledge in using ICT		Worcman (2002);
		Capabilities	Corruption and a lack of knowledge of technologies are often problems. The Internet and digital technology create new possibilities for the development of cultures, education, communities and knowledge.	<ul style="list-style-type: none"> • More than 1 million photos and 40 million user-created videos have been uploaded onto photo and video-sharing sites. 	Verdegem (2011)
	Confidence				
	Traditions	Confidence	Grouped into types of change experienced by society		
		Attitude	<p>Tradition is another powerful driver (change is hard)</p> <p>The impact of social media may be understood as a first sign of re-engineering by society, as it marks a fundamental shift from technology driven innovation toward user and society driven innovation.</p>	<ul style="list-style-type: none"> • Social networking applications like Facebook, allow individuals to interact with people beyond their immediate networks. 	Verdegem (2011); Helsper (2008)

2.4 ELECTRONIC GOVERNMENT/E-GOVERNMENT

Electronic government, or e-government, has emerged as a popular catch phrase in public administration to cover many functions for example; service delivery (Bekkers and Zouridis, 1999), efficiency and effectiveness (Heeks, 2001b), interactivity (DiCaterino and Pardo, 1996), decentralization, transparency (La Porte, De Jong, and Demchak, 1999), and accountability (Ghere and Young, 1998; Heeks, 1998, 1999b; McGregor, 2001). There is not any universally accepted definition of the e-government concept (Halchin, 2004; Gil-Garcia and Luna-Reyes, 2006; Andersen and Henriksen, 2005; Grönlund and Horan, 2005; Heeks and Bilur, 2007). United Nation and the American Society for Public Administration (ASPA) define e-government as “utilizing the Internet and the World-Wide-Web for delivering government information and services to citizens” (UN and ASPA, 2002, p. 1). It may also include using other ICTs in addition to the Internet and the Web, such as “database, networking, discussion support, multimedia, automation, tracking and tracing, and personal identification technologies” (Jaeger, 2003, p. 323). Fountain (2001) calls e-government phenomenon ‘digital government’ or ‘virtual state’ instead of e-government and he defines it as the government that is organised increasingly in terms of virtual agencies, cross-agency and public-private networks whose structure and capacity depend on the Internet and Web (2001, p. 4). “The use of information technology to enable and improve the efficiency with which government services are provided to citizens, employees, businesses and agencies” is another definition for e-government presented by Carter and Bélanger (2005, p.5). Moreover, Means and Schneider (2000, p. 121) define e-government as the relationships between governments, their customers (businesses, other governments, and citizens), and their suppliers (again, businesses, other governments, and citizens) by the use of electronic means. Brown and Brudney (2001, p. 1) define e-government as the use of technology, especially Web-based applications to enhance access and efficiently deliver government information and services. They categorise e-government efforts into three broad categories of Government to- Government (G2G), Government-to-Citizen (G2C), and Government-to-Business (G2B).

According to Garson (1999), E-government conceptualised into four theoretical frameworks. The first framework involves the potential of IT in decentralisation and democratization. The second normative/dystopian framework underlines the limitations and contradictions of technology. Third, the sociotechnical systems approach emphasizes the continuous and two

way interaction of the technology and the organizational–institutional environment. The fourth framework places e-government within theories of global integration.

2.4.1 The origin of e-government

The term e-government was born out of the Internet boom. It emerged in the late 1990s, but the history of computing in government organisations can be traced back to the 70s at the beginnings of computer history (Kraemer, et al, 1978; Danziger and Andersen, 2002). At that time, Information Technology use within government was the main concerns in literature, while the recent e-government literature concerns more about the external use, such as services to the citizens (Ho, 2002). E-government started as a practitioner field, basically convening practitioners struggling to meet the new challenges of the Internet medium by implementing new systems creatively. E-government phenomenon has emerged as a domain of significant interest to both researchers and practitioners. E-Government is about using the tools and systems made possible by information and communication technologies to provide better public service to citizens and business.

The early stage of e-government lunched in the mid-1990s, focused on ICT infrastructure to build technical capabilities and train human resources to organize and automate traditional government practice (Sorrentino and Niehaves, 2010). The second stage adopted a wider perspective; for example, it involves a transformation of the presentation and the delivery of services (ibid). But according to the literature, future e-government initiatives must follow a multi-channel approach (see, for example, Vassilakis et al., 2006; Janssen and Wagenaar, 2003; Millard and Jonas, 2004). These approaches may involve service delivery using mobile technologies and television as well as public private partnerships involving intermediaries (Sorrentino and Niehaves, 2010; Burt and Taylor, 2008; Josefsson and Ranerup, 2003; Al-Sobhi et al., 2010). Such approaches are significant as e-government policies are increasingly interwoven with diversity-related issues, such as social inclusion and population ageing, or quality of life (Sorrentino and Niehaves, 2010), which is expected to provide better accessibility to citizens. One of the goals of the Digital Agenda for Europe is to have one out of two citizens and four out of five businesses utilize e-government services by 2015 (Lörincz, 2010). Moreover, UN e-Government survey in 2010 stated that:

“In order for e-Government to be inclusive, it must reach out to all segments of population with e-services that meet the needs of the digitally disadvantaged” (United Nations E-Government Survey 2010, P. 89).

2.4.2 The stages of e-government

E-government is evolutionary in nature; involving phases of development thus it cannot be thought of as a one-step process or implemented as a single project. Literature on e-government illustrates that many researchers have developed and proposed e-government stage models to determine development of e-government (Baum and Di Maio, 2000; Howard et al., 2001; Layne and Lee, 2001; Hiller and Belanger, 2001; Deloitte and Touche, 2001; United Nation, 2001; Chandler and Emanuels, 2002; Murphy, 2005; Siau and long, 2005; Iayashree and Marthandan, 2010). Table 2.8 presents a summary of some e-government stage models showing how the proposed models can mainly be categorised into four main stages starting from Presence stage, then Interaction stage, followed by Transaction stage, and ending with Transformation stage. In most cases, governments start with the delivery of online information, but as soon as the public demand and internal efficiency ask for more complex services the situation change. As an effect for this change some services will be online earlier than other services. This is usually driven either by the public demand force or cost saving aspects for the government.

Table 2.8 A summary of some e-government stage models

Gartner (2000)	Layne and Lee (2001)	Hiller and Belanger (2001)	UN/ASPA (2002)	Siau and Long (2005)	Iayashree and Marthandan (2010)
Presence	Cataloguing	Information	Emerging presence Enhanced presence	Web presence	Web presence
Interaction	Transaction	Two way communication	Interactive presence	Interaction	Interaction
Transaction		Transaction	Transactional presence	Transaction	Transaction
Transformation	Vertical Integration Horizontal Integration	Integration	Seamless or fully integrated presence	Transformation E-democracy	Transformation E-society

In 2000 Gartner, an international e-business research consultancy firm has formulated a four-stage e-governance model. The model shows four stages for different e-governance (e-democracy and e-government) solutions. Gartner defined these stages based on experiences

with e-commerce and e-governance in Europe and other Western regions. The first stage is Web presence (when agencies provide a web site to post basic information to the public), followed by Interaction (when users are able to contact agencies through web sites and do self-service), then Transaction (when users can complete entire transactions online, and finally Transformation (when governments transform the current operational processes to provide more efficient, integrated, unified and personalized service).

Layne and Lee (2001) regarded e-government as an evolutionary phenomenon and proposed a four-stage model. The four stages are; Catalogue (This stage delivers some static or basic information through web sites), followed by Transaction (This stage extends the capability of catalogue and enables citizens to do some simple online transactions such as filling government forms), then Vertical integration (This stage focuses on integrating government functions at different levels, such as those of local governments and state governments), and finally Horizontal integration (This stage focuses on integrating different functions from separate systems so as to provide users a unified and seamless service). Hiller and Belanger (2001) identified a four-stage model. The first stage in this model is information stage, followed by two-way communication stage, then transaction stage, and finally integration stage.

In 2002 a model of e-government development was introduced in a study conducted by the United Nations and the American Society for Public Administration (ASPA) (United Nations and American Society for Public Administration 2002, p. 2). It proposed a five-stage model of development. The first stage is Emerging stage (when official online government presence is established). The Second stage is Enhanced stage (when number of government sites increase in number and become more dynamic). The third stage is Interactive stage (when users download forms and interact with officials through the Web). The fourth stage is Transactional stage (when users have the ability to make online payments for transactions). The final stage is Seamless stage (when the integration of electronic services across government agencies possible).

Siau and Long (2005) synthesizing e-government stage model into five-stage model starting with the Web presence (when governments post simple and limited information through their web sites), Interaction (simple interaction between the governments and the users), Transaction (when users conduct complete online transactions), Transformation (Vertical and

horizontal transforming in the way that governments provide services), and E-democracy (when E-government gradually changes the way in which people make political decisions).

Despite some minor differences in phrasing, Iayashree and Marthandan (2010) adapted Siau and Long (2005) five-stage model. Iayashree and Marthandan (2010) model consists of the following stages; Web presence Interaction, Transaction, Transformation, and E-society (The integration process when it is reaching its maturity leads to the emergence of e-society). Iayashree and Marthandan (2010) defined the e-society as one that uses digital media in most relationships: peer to peer (personal communications, business to business purchases etc.); government to other (government online); other to government (voting/governance); peer to other (business to consumer, etc.).

From aforementioned literature on e-government stage models, the author concludes that most of the models confer mainly with four stages including; Web presence, Interacting, Transaction and Transformation stage. While the last two proposed models go beyond the Transformation stage and stop at that stage included e-democracy/e-society as the fifth stage of e-government (Siau and Long, 2005; Iayashree and Marthandan, 2010). The author conclude that these models which were developed in 2005 and 2010, shed light on the importance of citizen's participation and e-inclusion concepts.

2.4.3 Theories that are relevant to e-government adoption

The study of adoption and usage of information technology (IT) is considered to be one of the most mature areas of research within the information systems (IS) discipline (Benbasat and Zmud, 1999; Hu et al, 1999; Venkatesh et al, 2003). Subsequently, a number of theories and models have been adopted from diverse disciplines such as social psychology, sociology and marketing, and have been modified, developed and validated by IS researchers in order to understand and predict technology adoption and usage (Benbasat and Zmud, 1999; Venkatesh et al, 2003). Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975); the Theory of Planned Behaviour (TPB) (Ajzen, 1991; 1988; 1985; Ajzen and Fishbein, 1980; Ajzen and Madden, 1986); the Technology Acceptance Model (TAM) (Davis, 1989; Davis et al, 1989); and the Diffusion of Innovation (DOI) Theory (Rogers, 1995) are some of the theories and models that have been taken from other disciplines and further modified, extended and integrated according to the needs of IS research. These models usually extend the technology adoption models by inclusion of various additional constructs to account for

the multi-disciplinary nature of the field. For example, Taylor and Todd (1995) proposed the decomposed TPB by modifying TPB and integrating the diffusion of innovation constructs within it in order to understand various factors in detail. Likewise, Venkatesh and Morris (2000) extended TAM by integrating gender and subjective norm constructs with the original TAM model in order to understand the role of gender and social influence in technology adoption.

A selection of an appropriate model or various constructs from different models posed to be a problem due to the large numbers of choices of theories and models (e. g. TRA, TPB, TAM, DOI). Venkatesh et al (2003) argued that researchers are confronted with a choice amongst a multitude of models and find that they must "pick and choose" constructs across the models, or choose a "favoured model" and largely ignore the contributions from alternative models. A review of e-government adoption research suggests that although e-government models and theories are widely tested and validated to explain the usage and adoption of technology, these models are not sufficient enough to capture all the aspects of e-government adoption research. Therefore their application is limited to studying e-Inclusion. However, these models can be the guiding theories in the initial stage of development, testing and validation an e-Inclusion framework. Therefore, in order to assist selection of an appropriate model and constructs for current research, Table 2.9 presents some of the theories that used in e-government adoption research, their focus, description and limitations.

The previous section (section 2.2) provides a detailed review on e-inclusion domain. The aforementioned section (section 2.3) provides a review on e-government domain; the next section (section 2.4) presents the reasons after choosing these two particular domains (e-Inclusion and e-government) for this study.

Table 2.9 Theories of technology acceptance/adoption and use

Theory	Focus	Description	Limitation	References
Diffusion of Innovations Theory (DIT)	Technology adoption	Rational choice theory of adoption in a process of four stages; Knowledge, Persuasion, Decision Confirmation. Sufficiently broad to incorporate sociological, psychological, communication and technology factors.	The generality makes it difficult to specify the particular variables that determine the acceptance and the use of government internet services. Do not provide default extension mechanisms (Ozkan and Kanat, 2011).	Rogers, 1982–1995
Domestication Theory (DT)	Use sociological perspective	It stresses the implementation of technology in local user environments.	It neglects the first acceptance or adoption by users.	Silverstone, 1991; Silverstone and Haddon, 1996
Social cognitive theory (SCT)	Use	It explains existing media use by habits and new use by learning in a social environment. Expected outcomes of media use are considered to be driving factor. Outcomes higher when people: More experience with medium, Higher self-efficacy and Accustomed to use it (habit strength).	It is a psychological theory that does not pay attention to social demographic, characteristics of media and supply of media or electronic service. It focus on media use above first media adoption.	Bandura, 1986; Larose et al., 2001; Larose and Eastin 2004
Technology Acceptance Model (TAM)	Media acceptance	Based on psychological theory of planned behaviour + theory of reasoned action. The perceived usefulness and the perceived ease of use of a particular new technology determine someone's attitude toward it. This attitude causes actual use.	This model neglects emotional choices and effective attitudes and focuses on acceptance instead of use. Limitations of in terms of extendibility and explanatory power because of simplistic structure of the model. (Benbasat and Barki, 2007). Neglecting perceived behavioural control may lead to incomplete and potentially misleading model (Pavlou and Fygenson, 2006).	Davis et al., 1989
Unified theory of acceptance and use of technology (UTAUT)	Use Acceptance	Have the highest statistical significance in contemporary empirical research (Van Dijk, 2008).	Does not contain demographic factor except for age and gender. It does not consider factors of digital media use or factors describing the supply of services. This theory addresses both acceptance and use, but it drops the attitude concept and replaces it with the concept of behavioural intention. Do not provide default extension mechanisms (Ozkan and Kanat, 2011).	Venkatesh, Morris and Davis, 2003

Theory	Focus	Description	Limitation	References
Theory of Planned Behaviour (TPB)	Intention	Psychology theory used to explain human behaviour possesses of these extension mechanisms.	Although TPB can serve as an effective diagnostic tool when examining IT adoption or acceptance and usage (Benbasat and Zmud, 1999), decomposed structure helps to increase predictability in comparison to TPB. TPB can be considered as a guiding framework when developing the proposed conceptual model for this research.	Ajzen, 1991; 1988; 1985; Ajzen and Fishbein, 1980; Ajzen and Madden, 1986
Motivation Model (MM)	Behavioural Usage	Motivations related to intrinsic personal goals are contrasted with those related to extrinsic goals. Intrinsic and extrinsic motives are predictors of behavioural usage	MM neglects hedonic factors of system use where a ritual pattern of usage is plausible (Luo, Chea, and Chen, 2011)	Davis, Bagozzi, and Warshaw, 1992
Theory of Reasoned Action (TRA)	Behaviour Intention	person's behavioural intention depends on the person's attitude about the behaviour and subjective norms	Incomplete volitional control (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975).	(Fishbein and Ajzen, 1975);

2.5 CHAPTER SUMMARY

This chapter provided a comprehensive review of the literature in two areas, e-Inclusion and e-government adoption. The chapter started with presenting a section on e-inclusion this section provided a comprehensive and multidisciplinary landscape on e-Inclusion concepts and fundamentals, then discussed the origin of e-Inclusion and why the terminology changed from digital divide to e-inclusion, then the economic, social, and individual benefits of e-Inclusion were presented, followed by the European strategies on promoting e-Inclusion from 1999 to the latest strategy on 2012, then the situation of e-inclusion in the UK was presented, followed by the theories and models that are relevant to e-inclusion. This section ended with presenting taxonomy for e-inclusion which will help to build the research model and conduct the empirical study for this research. Then a section to review the literature on e-government was presented including the origin of e-government, the development stages of e-government, and the theories that are relevant to e-government adoption. The last section before providing the chapter summary was presented to show the intersection between the two areas, e-Inclusion and e-government and the reason after choosing these specific domains.

In order to navigate the available literature and research a two-phase research approach has been designed. This included:

- An extended mapping of the literature from the last ten years in the information systems databases and secondary policy documents. This phase allowed to identify the most dominant and common explanations in relation to e-Inclusion and e-government.
- An Identification, selection, and categorization of the factors that influence e-inclusion considering two main impact areas; social inclusion and e-government. This phase helped in presenting e-inclusion taxonomy.

This chapter contributes to the evolving literature on e-Inclusion. Explanations represented in the existing body of research will help in propose a model to examine e-Inclusion and better understand the factors influence e-Inclusion. A big challenge was to grasp the e-Inclusion issue in its complexity without losing the ability to propose efficient steps to improve the current gaps in research. The lack of conceptual definitions and theoretical frameworks for e-Inclusion has prevented the development of reliable measurements and identification of specific factors that

influence e-Inclusion. Further, this research has attempted to highlight the growing interest in engagement with social, cultural, political and economic factors that influence ICT adoption in the information society. It looks at e-Inclusion as the development of a sustainable participatory information society for all. The main attention was on e-government services and how the increase in these services poses new challenges with regards to digital and social inclusion.

CHAPTER 3: CONCEPTUAL MODEL

CHAPTER THREE: CONCEPTUAL MODEL

3.1 INTRODUCTION

The previous chapter performed a comprehensive literature review of the two domains e-Inclusion and e-government adoption. This chapter aims to develop a conceptual model that can examine the factors that influence e-Inclusion. The author will firstly build upon the literature by clearly articulating the specific research gaps that this study will address. Then a theoretical foundation will be presented to review and assess the appropriateness of previous models and constructs to study e-inclusion. Then this chapter provides further theoretical justification for combining the Uses and Gratification Theory (U&G) and the Decomposed Theory of Planned Behaviour (DTPB), which will act as a theoretical lens to guide the conduct of this study. The author will formulate the hypotheses and finally draw a conceptual model of e-inclusion.

The chapter is structured as follows: initially section 3.2 presents the research gaps that have been identified earlier. Section 3.3 introduces the theoretical foundation for building research model. It consists of four sub sections including; Uses and Gratifications Theory, Decomposed Theory of Planned Behaviour, perceived risk, and perceived trust. Section 3.4 presents the conceptual framework with constructs definitions and measurement. The next section 3.5 presents the proposed model for this research followed by the hypotheses and the relationships between the constructs. Finally, section 3.7 provides a brief conclusion of the chapter through the chapter summary.

3.2 RESEARCH GAPS IDENTIFIED

The literature reviews, presented in chapter two, demonstrate that very significant bodies of literatures have already been established to help understand e-government adoption and there is a growing body of literature on e-Inclusion. However, the understanding of e-services usage remains extremely poor and uncoordinated in the public sector context. Moreover, in an extremely fast moving and rapidly changing Information Systems (IS) domain, it is inevitable that studies quickly become dated, as user behaviours continue to evolve. Furthermore, it has been noted that there is a missing link between the studies of e-inclusion and e-government adoption, particularly from citizens' perspective. Consequently, through a critical review of these bodies of literature, it has been possible to identify six important gaps in the literature, which this

study will attempt to fill. Each of these gaps is independently presented and reviewed, in subsections 3.2.1 through to 3.2.6.

3.2.1 Research Gap 1: E-inclusion as an emerging field

Reviewing an emerging field with poorly defined boundaries and research styles such as ‘e-Inclusion’ poses special problems. These problems include both the selection of literature, where, for example, some authors use the term ‘digital divide’ and others use terms such as ‘digital exclusion’ or ‘digital inequalities’ to describe e-inclusion (Saebo et al., 2008). In addition, E-inclusion is a multidimensional construct as discussed in the literature review (chapter 2) and need to be explained based on multiple factors (Norris, 2001; Van Dijk and Hacker, 2003; Barzilai-Nahon, 2006; Fuchs, 2009; Billon et al., 2009). Moreover, Saebo et al. (2008) posit that it may be difficult to understand what kind of analysis model should be adopted and from which supporting disciplines the conceptual models should be drawn from.

3.2.2 Research Gap 2: The theory gap in e-Inclusion

Despite a growing literature on e-Inclusion, limited research has been conducted to fully comprehend e-Inclusion. Bentivegna and Guerrieri (2008, P.8) argue that “*the quantitative and qualitative understanding of ICT and e-services usage remain extremely poor and uncoordinated, it is not yet possible to find fully consolidated and reliable quantitative datasets and indicators to provide a broad quantitative perspective and facilitate benchmarking for monitoring the process of e-Inclusion*”. In addition, Timmers (2008, P.18) in his study about Europe e-Inclusion policy finds that “*e-Inclusion needs a comprehensive and coherent approach addressing any social and economic exclusion factor with the help of ICT, addressing the risk of ICT as a factor of exclusion*”.

3.2.3 Research Gap 3: Lack of e-Inclusion frameworks

The literature review demonstrated the multidimensional nature of e-inclusion and confirmed the lack of relevant frameworks for e-Inclusion that are useful for evaluating the impact of electronic services on general populations. In particular, the frameworks and models used in e-inclusion studies tend to be less applicable for explaining the complexity of e-Inclusion and evaluating the

needs of disadvantaged people with more complex needs (Van Dijk, 2005, 2006; Becker et al., 2008; Digital inclusion team, 2009).

3.2.4 Research Gap 4: The practise gap in e-Inclusion

Despite the great interest in e-Inclusion policies and initiatives all across Europe, e-Inclusion is still lacking and widening in some countries (Lupac and Sladek, 2008; Guerrieri and Bentivegna, 2011). Helsper (2008) argues that technological forms of exclusion are a reality for significant segments of the population, and for some people they reinforce and deepen existing disadvantages. Elderly, disabled, illiterate people, minorities, people with low income, and unemployed people are some examples of disadvantaged groups who are in risk to be digitally excluded.

3.2.5 Research Gap 5: The theory-practise gap in e-Inclusion

This research gap relates to the Internet activities used by citizens. For example, the statistics for ICT usage by individuals in the UK from 2010 to 2013 show that 7 percent of the UK's population stopped interacting with the government online while both e-commerce and e-banking (transactional services), are used by the citizens more than e-government. In fact, the percentage of usage for e-commerce and e-banking are increasing every year (Information society statistics website, 2014; Becker et al., 2008). Therefore, it can be posited that citizens who use e-commerce and e-banking have the necessary qualification to engage in more complex online actions and they do not have any trust issues with the internet. However, they do not participate in e-government activities. Therefore, the author concludes that e-government use is the last level of e-Inclusion and finding the factors that determine and influence people to use e-government will help to understand the factors that influence e-Inclusion and better explain possible inclusion gaps.

3.2.6 Research Gap 6: Lack of e-Inclusion research in published e-government research

Although the parallel between e-government and e-Inclusion research are critically important and there are important similarities between their philosophical stances and theoretical lenses, there are relatively few explicit examples of e-Inclusion research findings in published e-government research and vice versa (Helbig et al., 2009). One of the reasons is both e-inclusion and e-government are

complex, dynamic, and multifaceted phenomena and there are many theoretical and empirical difficulties of bringing together the e-Inclusion and e-government fields.

3.3 FOUNDATION OF THE PROPOSED CONCEPTUAL MODEL

Having articulated the six significant gaps that this study has been explicitly designed to fill, it is possible to introduce the theoretical lens that will be used to both structure and interpret the empirical research conducted in this study. Drawing from the literature in the previous chapter, a conceptual taxonomy of the key inhibitors for e-Inclusion have been identified namely; demographical, economic, social, cultural, political, and infrastructural (See Table 3.1). The political dimension was not considered in this study since this may require a comprehensive analysis of the government legislations and regulation, content analysis of the accessible information, and interviews with government bodies, which cannot be achieved within this study due to the time constraints. Indeed, the theoretical contribution of this research was focused on extending the current boundaries of knowledge in the area of e-Inclusion. It was found that the lack of conceptual definitions and theoretical frameworks for e-Inclusion has prevented the development of reliable measurement and identification of specific factors that influence e-Inclusion. To this end, it is hoped that the developed taxonomy (See chapter two) offers greater elaboration and refinement of the variables that can be used to assess e-Inclusion and will thus contribute towards addressing these gaps in the literature and current e-Inclusion research. Notably, these themes emerged in the literature from actual citizens' behaviour in their day-to-day life situations while using electronic-government services.

Both IS theories and e-Inclusion models were discussed in the literature review chapter (Chapter two), It was found that there application is limited to studying e-Inclusion. The findings from the literature were crucial for understanding and shaping the research scope of e-Inclusion which at the same time, has been instrumental for building the research model, presents set of hypotheses and create the survey of e-Inclusion.

Table 3.1 Key inhibitors for e-Inclusion in the context of e-government

Theme	Factor 1	Factor 2	Factor 4	Factors 5
Social	Language	Knowledge	Traditions	Skills & IT skills
Demographic	Age	Gender	Race & Ethnicity	Marital Status
Infrastructural	Urbanization	Resources	Access	Lifestyle
Cultural	Education	Health	Motivation	
Political	Government support	Accessible information	Legislations	

However, these models can be the guiding theories in the initial stage of development, testing and validation of an e-Inclusion framework. Therefore, in order to assist selection of an appropriate model and constructs for current research, the theories that are used in e-government adoption research and e-Inclusion research were discussed with their focus, description and limitations earlier in chapter two. After conducting a comprehensive literature review and evaluate both the e-inclusion models and theories and models used in e-government adoption, a research model is developed in the present study based on the Decomposed Theory of Planned Behaviour (DTPB) and Uses and Gratifications Theory (U&G). These two theories were chosen because of their appropriateness for e-Inclusion research; the critical factors that influence e-inclusion can be covered by (DTPB) constructs while the individual's gratifications that determine using specific Internet activities is covered by (U&G).

3.3.1 Uses and gratifications theory (U&G)

The uses and gratifications theory (U&G) originated from the functionalist perspective on mass media communication. U&G was first developed in research on the effectiveness of the radio medium in the 1940s. The main focus of U&G -at that time- was on the explanations for audience members' motivations and associated behaviours. Similarly, Herzog (1944) used the term gratifications to depict the specific dimensions of usage satisfaction of radio audiences. Following that, mass communication theorists applied the U&G perspective in the context of various mass media such as television and electronic bulletins. The U&G research has been quite fruitful in understanding consumers' motivations and concerns for using various media such as radio, TV, and electronic bulletins (Eighmey and McCord, 1998). Many theorists believe that uses and gratifications is a research tradition highly suited for Internet studies (See, Johnson and Kaye, 2003; Lin, 1999; Weiser, 2001). U&G has been widely applied to examine consumer experience associated with websites (Chen et al., 1999; Korgaonkar and Wolin, 1999; Eighmey and McCord, 1998; Mukherji et al., 1998). According to Stafford et al. (2004) U&G guides the assessment of user motivations for media usage and access and explains how needs motivate individual's adoption of information technology. Moreover, U&G has increasingly being used to investigate the adoption of web-based information services (Stafford et al., 2004; Diddi and LaRose, 2006; Ko et al., 2005; Moon and Kim, 2001).

A basic assumption of U&G theory is that users are actively involved in media usage and interact highly with the communication media. Since the interactive nature of the Web requires high user involvement, the application of uses and gratification theory to improve our understanding of e-Inclusion and e-government users' behaviour seems legitimate.

U&G literature presents multiple underlying constructs. For example, many researchers have used entertainment, informativeness, and irritation as U&G dimensions (Herzog, 1944; Eighmey and McCord, 1998; Chen et al., 1999; Korgaonkar and Wolin, 1999; Plummer, 1971; Rubin, 1994). Table 3.2 presents some of U&G studies with a list of gratifications used in seminal studies.

Table 3.2 Previous U&G studies and gratifications used

Authors & years	Gratifications	Authors & years	Gratifications
Svennevig (2000)	Diversion, personal relationship, social relationships, personal identity, surveillance, imagination, stimulation, and mood changing.	Papacharissi and Rubin (2000)	Interpersonal Utility Convenience Information Seeking Pass Time Entertainment
Stafford et al. (2004)	Internet process gratifications Internet content gratifications Internet social gratifications	Yang and Kang (2006)	Entertainment Habit Social Interaction Information Escapism
Stafford and Gonier (2004)	Searching, Information Communication Socialization Shopping	Cha (2010)	Interpersonal utility, Boredom relief Earning, Convenience Entertainment Escape
Roy (2009)	Content: wide exposure, career Opportunities Process: user friendliness, Self-development Social: relaxation, global exposure	Lin (2001)	Entertainment Escape Surveillance Companionship Social interaction Information learning
Huang (2008)	Entertainment Irritation	Livaditi et al. (2002)	Entertainment, Companionship Escape
Luo et al. (2011)	Information Seeking, Interpersonal Utility Entertainment, Pass Time Convenience	Kaye and Johnson (2003)	Guidance Entertainment/social utility Convenience, Information seeking

U&G studies on the Internet have identified multiple dimensions of Internet usage gratifications. For example, Stafford et al. (2004) have identified three key dimensions related to consumer use of the Internet and they are; process gratification (e.g., playing with the technology, resources, search engines, browsing), content gratification (e.g., information, education, knowledge, learning, research and entertainment), and social gratification (chatting, friends, interaction, and people). Content gratifications concern the *messages* carried by the medium, and processes gratifications concern *actual use* of the medium itself. Finally, the social gratifications which concern the *interaction* have been identified by Stafford as a new dimension of Internet gratification. Stafford dimensions of U&G is adopted for this study to construct the conceptual basis and research hypothesis for the arguments presented in this research. The reason behind adopting Stafford dimensions that he identified three

key dimensions of gratifications related specifically to consumers' use of the Internet as a medium. Moreover, the important contribution of Stafford was the identification of the social gratification construct which provides opportunities for the advancement of Internet access services (See Table 3.3).

Table 3.3 Gratifications dimensions adopted for this study

Gratifications	Items
Process Gratifications	<ul style="list-style-type: none"> • Resources (online services and utilities that you use) • Search Engines • Searching (looking for specific information) • Surfing (browsing the web, not necessarily with a specific goal) • Technology (information technology; computer system that you access, learn about, or use when online) • Website
Content Gratifications	<ul style="list-style-type: none"> • Education • Information • Knowledge • Learning • Research
Social Gratifications	<ul style="list-style-type: none"> • Chatting (live interaction) • Interaction (communication with people) • People (social interaction, in general)

Scholars have also argued that e-Inclusion is not merely about digital access, digital literacy, or cost anymore. Fuchs (2009) posits that there are groups of people who although having access and skills to use the internet and e-government services, do not do so because they don't see the relevance of, or do not trust in government websites. Therefore, understanding the citizens' motivations and gratifications to use the Internet is a critical factor in the context of e-Inclusion and e-government adoption. In this respect, U&G can help to better understand citizens' motivation for e-government use (Ruggiero, 2000). This study suggests that citizens use the Internet for several reasons. The Internet usage for different gratifications are associated with the level of e-Inclusion and the four stages of e-government development (information available online, one way interaction, two way interaction, and full online transaction) because there is inherent interrelation between degree of use and degree of gratification (Johnson and Kaye, 2003). These gratifications can be divided into three dimensions based on Internet-specific U&G measures which have been demonstrated in the management information system literature (Stafford et al., 2004; Stafford and Stafford, 2001). The first dimension covers gratifications based on the content of the Internet (content gratifications) which is related to the repeated use of a media. The second dimension covers gratifications based on the actual experience of using the Internet (process gratifications). The third dimension covers

gratifications arising from Internet use as a social environment and provides communication and interaction (social gratifications). Fuchs (2009) called lack the interest for using the Internet, e-commerce or e-government “motivational access”. This psychological aspect of the e-Inclusion is often neglected in literature (Fuchs, 2009; Bruno et al., 2010). Moreover, motivational access is the first stage in Van Dijk, (2005, 2006) cumulative “*successive types of access*” model. In this model the concept of access evolves into successive types of access to digital technologies: motivational access, physical access, skills access, and usage access. According to Van Dijk’s model, adoption starts with sufficient attractiveness of the innovation and the motivation for adoption. These arguments in the literature offer a strong justification for the author to consider U&G as a conceptual lens to study e-Inclusion. In table 3.4, various uses of U&G theory in IS studies is presented.

3.3.2 Decomposed theory of planned behaviour (DTPB)

The DTPB (Taylor and Todd, 1995) is derived from the theory of planned behaviour (Ajzen, 1991) with its fundamental belief and structure (See Figure 3.1). Taylor and Todd (1995) have proposed the DTPB to explain user's acceptance of information system. The DTPB term exactly means that this theoretical model can explore more completely the dimensions of attitudes, subjective norm, and perceived behavioural control in TPB by decomposing them into specific belief dimensions (Taylor and Todd, 1995). Later, several studies have also accepted this term to explore user acceptance of a range of information systems (Mantymaki et al., 2014; Susanto and Goodwin, 2013; Chau and Hu, 2001; Hsu and Chiu, 2004). Consequently, DTPB is expected to provide a more comprehensive understanding of user acceptance of intergovernmental e-government services for e-government services practitioners and researchers.

This study adopted the decomposed theory of planned behaviour (DTPB) for the following reasons. First the DTPB was developed especially for understanding information technology use (Taylor and Todd, 1995a) and effectively explained individual intentions and behaviour in adopting e-government services (Hung et al., 2006) and mobile services (Yulong and Wenli, 2009).

In DTPB, attitude, subjective norm, and perceived behavioural control are further decomposed into some more specific constructs (Lau, 2004; 2007). Taylor and Todd (1995) demonstrated that DTPB has the enhanced descriptive power than theory of reason action and TPB models. Moreover, DTPB provides a better gratifying explanation of adoption intention (Shin and Fang, 2004), a complete understanding of usage (Lau, 2004), and a complete understanding of adoption behaviour (Lau, 2007). The DTPB allows researchers to decompose the attitudinal, normative and control categories

Table 3.4 Uses and gratifications studies in IS research

Theories & models used	Gratifications	Context	Authors
U&G Qualitative	<ul style="list-style-type: none"> • Process gratification • Content gratification • Social gratification 	E-consumer behaviour	Stafford et al., (2004)
U&G Quantitative	<ul style="list-style-type: none"> • Informational • Emotional • Tangible • Companionship 	Communication CMSS use	Chen and Choi (2011)
U&G Mixed method	<ul style="list-style-type: none"> • Self-development • wide exposure • user friendly • relaxation • career opportunities • global exchange 	IS Human behaviour	Roy (2009)
U&G TAM Quantitative	<ul style="list-style-type: none"> • Entertainment • Irritation 	IS Consumer behaviour	Huang (2008)
Motivational model U&G Quantitative	<ul style="list-style-type: none"> • Information seeking • Interpersonal utility • Entertainment • Pass time • Convenience 	Technology adoption IS	Luo, Chea, and Chen (2011)
U&G Digital divide framework Quantitative	<ul style="list-style-type: none"> • Learning Gratification • Acquisition Gratification • Connection Gratification 	IT Society	Cho et al., (2003)
U&G Quantitative	<ul style="list-style-type: none"> • Access gratification factor • Self-gratification factor 	Communication management	Chua, Goh, and Lee (2012)
U&G Grounded theory Qualitative	<ul style="list-style-type: none"> • Popularity • Efficient communication • Relationship formation and reinforcement • Convenient communication • Curiosity about others 	Use of Myspace and Facebook	Urista, Dong, and Day (2009)
U&G Social cognitive theory Quantitative	<ul style="list-style-type: none"> • Information seeking • Socializing • Entertainment • Status Seeking 	News sharing in social media	Lee and Ma (2012)
U&G Quantitative	<ul style="list-style-type: none"> • Social surveillance • Entertainment • Recognition • Emotional support • Network extension • Maintenance 	Facebook	Zhang, Tang, and Leung (2011)
U&G Qualitative	<ul style="list-style-type: none"> • Social interaction • Information seeking • Pass time • Entertainment • Relaxation • Communicatory utility • Convenience utility • expression of opinion • Information sharing • Surveillance 	Social media use	Whiting and Williams (2013)
U&G Quantitative	<ul style="list-style-type: none"> • Information seeking 	Internet information use	Cuillier and Piotrowski (2009)
U&G Quantitative	<ul style="list-style-type: none"> • Guidance • Information seeking/surveillance • Entertainment • Social Utility 	Using web as a source of political information	Kaye and Johnson (2002)
U&G Quantitative	<ul style="list-style-type: none"> • Entertainment • Informativeness • Irritation 	E-consumer behaviour	Luo (2002)

to better understand the reasons of adoption and non- adoption (Taylor and Todd, 1995).

In this research, usage behaviour in the e-Inclusion model is determined by behavioural intention, gratifications and the three major determinants; attitude, subjective norm, and perceived behavioural control which are used to determine the behavioural intention. The three major determinants are further decomposed into detailed belief constructs. Perceived usefulness, perceived ease of use and compatibility are the constructs that determine attitude. Interpersonal influence, media influence, and government influences are the constructs that determine subjective norm. Capacity, accessibility, affordability, and availability are the constructs that determine perceived behavioural control.

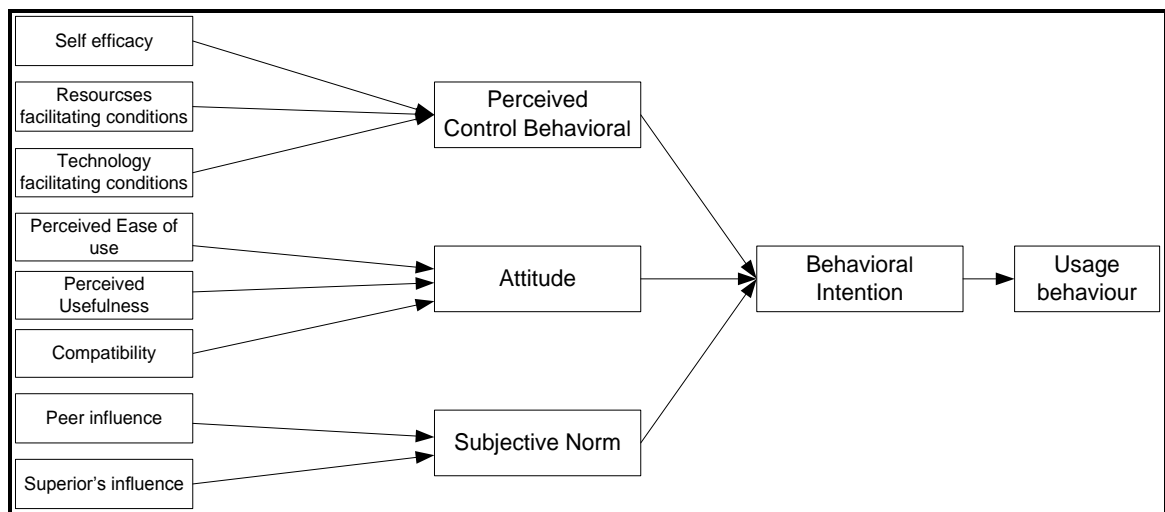


Figure 3.1 The decomposed theory of planned behaviour (Taylor and Todd, 1995)

According to DiMaggio and Hargittai (2001) inequality in e-Inclusion encompasses five main variables: technical means; autonomy; skill; social support; and purpose. In this study, we propose U&G to cover the purpose variables and DTPB to cover the technical, autonomy, skill, and social variables. Access is fundamental and basic to e-Inclusion. According to Van Dijk (2005, 2006), the concept of access evolves into successive types of access to digital technologies: motivational access, physical access, skills access, and usage access. Motivational access is covered by the U&G, physical access is covered by accessibility, skill access is covered by capacity, and usage access is covered by the behavioural intention in DTPB.

Moreover, looking at the increasing significance of trust and risk factors in the context of e-government adoption and e-inclusion, the authors find that both trust and risk must be considered in the research model.

3.3.3 Perceived trust

As far as trust and risk are concerned, they are not part of any of IS adoption models. However, the literature on e-government adoption identifies trust as crucial element of a relationship when risk comes in the picture (Mayer et al., 1995; Pavlou, 2003; Siau and Shen, 2003; Warkentin et al., 2002). Many studies have investigated the role of trust in e-commerce (e.g. Belanger et al., 2002; Gefen, 2002, Gefen et al., 2003; Hoffman et al., 1999; Jarvenpaa et al., 2000; McKnight and Chervany, 2002; van Slyke et al., 2004). However, the role of trust in e-government adoption has started popping up after that (Belanger and Hiller, 2006; Carter and Belanger, 2005; Gefen et al., 2005; Warkentin et al., 2002; Welch et al., 2005). Some studies have examined trust in adoption models, such as the technology acceptance model (TAM) and the diffusion of innovations (DOI) (Gefen, 2002; Pavlou, 2003; Warkentin et al., 2002); however, few (e.g. Belanger and Carter, 2008; Carter et al., 2011; Colesca, 2009a, 2009b) have concentrated completely on the interference of trust on e-government adoption. In addition, some studies on e-government adoption have used the trust model for analysing trust (e.g. Lean et al., 2009; Orgeron and Goodman, 2011).

A group of studies have also closely analysed the relationship between trust in government and e-government use. Some studies found that higher levels of trust in government is associated with more intensive e-service use (Belanger and Cartel, 2008, Carter and Belanger, 2005, Carter and Weerakkody, 2008, Goldfinch et al., 2009, Horsburgh et al., 2011, Hung et al., 2006, McNeal et al., 2008, Parent et al., 2005, Reddick, 2005, Rufin et al., 2012, Sang et al., 2009, Tolbert and Mossberger, 2006, Warkentin et al., 2002 and Welch et al., 2005). Others showed the absence of any significant relationship (Nam, 2014; Sweeney, 2008; Torres et al., 2005 and West, 2004).

For e-government use, trust in government may be more important than trust in the Internet (technology itself), since the percentage of citizens using the Internet is high and the percentage of citizens using e-government services is not satisfactory. This indicates that there is a gap between a higher level of trust in Internet and a lower level of trust in government (Sweeney, 2008). Overall, citizens more readily trust the functional aspects of e-government service which is the technology, but are not as willing to trust the government itself, the actual provider of the service or the government websites (Sweeney, 2008). In this sense, citizens tend to divide their trust in e-government into institutional trust in government versus process trust in the internet channel (Bart et al., 2005; Ozkan and Kanat, 2011; Susanto and Goodwin, 2010; Tolbert and Mossberger, 2006).

Looking at the increasing significance of trust factor in the context of e-government adoption, this research has decided to add both 'trust in e-government' and 'trust in Internet' to the conceptual model proposed to examine the influence of 'trust in e-government' on use of e-government services.

3.3.4 Perceived risk

Perceived risk is defined as the citizen's subjective expectation of suffering a loss in pursuit of a desired outcome (Warkentin et al., 2002). According to Pavlou (2003), perceived risk is composed of behavioural and environmental uncertainty. Behavioural uncertainty occurs because online service providers may behave in an opportunistic manner by taking advantage of the impersonal nature of the electronic environment, whereas environmental uncertainty arises due to the unpredictable nature of Internet-based technology that is beyond the control of the consumer. According to Pavlou (2003), perceived risk in e-commerce, reduces users' intentions to exchange information and complete transactions. In e-government, researchers suggest that perceived risk will have the same effect (See for example, Warkentin et al., 2002; Belanger and Carter, 2008). Moreover, e-government websites are much more than an information technology interface and are open to the public and accessible from anywhere in the world. According to Teo et al. (2008, P. 101) "*Different types of risks and uncertainties prevail in online transactions*". For these reasons perceived risk must be considered to explain citizens' intention to use e-government websites (Al-adawi et. al, 2005). In addition to the relationship between risk and intention, research shows that trust reduces risk perceptions (Salam et al., 2003).

Several researchers have empirically explored the role of trust and perceived risk in e-services (See for example, Belanger and Carter, 2008; Gefen et al., 2003; Welch et al., 2005). Some studies have also included trust or security in broader adoption models, such as the technology acceptance model and the diffusion of innovation theory (Gefen, 2002; Pavlou, 2003; Warkentin et al., 2002). However, few, have focused solely on the implications of risk on user satisfaction with e-service provision (Kertesz, 2003; Udo et al., 2008; Rotchanakitumnuai, 2008; Xiaoni and Prybutok, 2005).

A review of the literature identifies that researchers have suggested many components of perceived risk. For example, Cox (1967) identified two major categories of perceived risk: performance and psychosocial. Performance has been broken into three types: economic, temporal, and effort; and psychosocial into two types: psychological and social (ibid). Moutinho (1987) divided perceived risk into five categories; functional, physical, financial, social and psychological risks. Later, further analysis has been made on Moutinho's (1987) categories and proposed time risk as an additional

dimension of perceived risk (see Featherman and Pavlou, 2003; Pires et al., 2004; and Ueltschy et al., 2004). Moreover, Miyazaki and Fernandez (2001) broke down perceived risk into privacy and security concerns.

In line with the previous literatures, this study measured three categories of perceived risk: financial, performance, and time risks. The sources of financial risk include: potential monetary outlay associated with using e-government services. Performance risk involves: possibilities of e-government website malfunctioning and not performing as it was designed and therefore failing to deliver the desired benefits. Finally, the source of time risk includes: the perception of e-government services as a waste of time.

3.4 CONCEPTUAL FRAMEWORK

Before describing the development of the proposed conceptual model of e-Inclusion, the underlying reasons for considering a guiding theory and model as a foundation for the proposed conceptual model are briefly discussed. Two main criteria were identified by Taylor and Todd (1995), when selecting an appropriate model. Firstly, a model that provides good predictions while using the fewest predictors is preferable (Bagozzi, 1992; Taylor and Todd, 1995). Secondly, the model should contribute in providing an understanding of the phenomenon under investigation by providing reasonable predictive ability (Taylor and Todd, 1995). The second criterion was adopted when developing the conceptual model for this study since e-Inclusion study requires both a predictive ability (in the case of adoption) and a contribution to understanding (in the case of usage).

In order to explore the factors that influence e-Inclusion in the context of e-government in the UK, U&G, DTPB, trust and risk are integrated to propose the research model for e-Inclusion. (DTPB) is adapted from social psychology and integrated with the (U&G) in addition to theoretical findings from prior e-Inclusion research to theorize a model of e-Inclusion. Specifically, the research model brings together all (DTPB) constructs from the literature without the fear of losing theoretical plausibility of the model. The research model decomposes the perceived behavioural control components of (DTPB) into accessibility, affordability, availability, and capacity, the subjective norm component into interpersonal influence, media influence and government influence, and the attitude component into perceived usefulness, perceived ease of use, and compatibility. Three gratifications construct has been added to the

model; process gratification, content gratifications, and social gratifications. Trust in e-government, trust in Internet and perceived risk were added to the model in later stage and after conducting the pilot study. Finally the use is examined in terms of two key conceptualisations; frequency, and intensity. Figure 3.2 outlines the research model that will examine the factors that influence e-Inclusion in the context of e-government by combining (U&G) with (DTPB). In this research, Strafford et al. (2004) gratification dimensions have been adopted. He identified three key dimensions of gratifications related to consumers' use of the Internet; process gratifications (e.g., resources, search engines, searching for specific information, technology, website), content gratifications (e.g., information, education, knowledge, learning, research), and social gratifications (live chatting, interaction, and social interaction with people in general). The important contribution of Stafford was the identification of the social gratification construct which provides opportunities for the advancement of Internet access services. Content gratifications concern the *messages* carried by the medium, and processes gratifications concern *actual use* of the medium itself (Cutler and Danowski, 1980). Moreover, the social gratifications for the Internet concern with the interaction (Stafford et al., 2004).

Consistent with DTPB, the proposed model of e-Inclusion consists of three predictor types, namely attitudinal beliefs, normative beliefs and control beliefs and dependent variables that include behavioural intention (BI), content gratifications, process gratifications, social gratifications, use behaviour, satisfaction, and continuity. Since TPB is a generalised theory and can be applied to a wide variety of contexts for predicting the adoption of different types of IT (Benbasat and Zmud, 1999), the relationship between dependent and independent variables is hypothesised according to TPB. Therefore, TPB is considered to be a basic guiding theory for this research.

The components of the proposed model hypothesises that the behavioural intention to use behaviour is determined by the following four types of constructs: (1) attitudinal constructs (COMP, PEOU, PU) represent the citizens' favourable or unfavourable evaluation of the behaviour in question (i. e. use of e-government services); (2) normative constructs (Interpersonal influence, media influence, and government influence) represent the perceived pressure by family, friends, media, and government to perform the behaviour in question; (3) control constructs (Capacity, availability, affordability, and accessibility) represent the perceived control over the personal or external factors that may facilitate or constrain the behavioural performance

(Ajzen, 1991; Rogers, 1995; Taylor and Todd, 1995; Venkatesh and Brown, 2001); (4) gratifications (content gratifications which represents gratifications related to the repeated use of a media, process gratifications which represent gratifications based on the actual experience of using the Internet, and social gratifications which arise from Internet use as a social environment and provide communication and interaction). The predictor variables from the aforementioned four categories are expected to determine and explain the behaviour intention to adopt and use e-government, which in turn is expected to predict the actual use behaviour (Ajzen, 1991; Rogers, 1995; Taylor and Todd, 1995; Venkatesh and Brown, 2001).

A list of constructs with definition of each construct is presented in Table 3.5 and the measurement items for the constructs are presented in table 3.6.

Table 3.5 Constructs Definition and Sources

Construct	Definition
Attitude	Individual's evaluation of the behaviour of interest
Perceived Ease of Use	The degree to which an individual believes that performing the behaviour of interest would be free of effort
Perceived Usefulness	The degree to which an individual believes that using the system will help him or her to attain gains in life or job performance.
Compatibility	The degree to which the innovation fits with the potential adopter's existing values, previous experiences, and current needs
Perceived Content Gratification	people use Internet activities for the content carried by a medium (e.g., information, learning, education, knowledge)
Perceived Process Gratification	people use Internet activities for the simple experience of the media usage process (e.g., searching, surfing, technology)
Perceived Social Gratification	People use Internet activities for social purpose (chatting, live interaction, and interaction with people in general)
Perceived Behaviour Control	An individual's perception of existence or nonexistence of required resources and opportunities to perform the behaviour of interest
Accessibility	It refers to the ease with which individual can locate software and hardware required to engage in a behaviour from any location, at any time of the day
Affordability	The availability of financial resources needed to engage in behaviour.
Capacity	An individual's self-confidence in his ability to perform behaviour.
Availability	The availability of financial resources needed to engage in behaviour. It include adequate hardware ,platforms and high speed Internet connection required to engage in a behaviour
Subjective Norm	The perceived expectation from an individual's key referents to perform the behaviour of interest
Governmental Influence	The perceived expectation from the government institutions for individuals to perform the behaviour of interest.
Media Influence	The perceived expectation from the media for individuals to perform the behaviour of interest
Interpersonal Influence	The perceived expectation from family, relatives, friends and peers for an individual to perform the behaviour of interest.
Behaviour Intention	The degree to which a person has formulated conscious plans to perform or not perform some specified future behaviour.
Use Duration	Represents the amount of time spent using Internet
Use Frequency	How often do you use the Internet
Use Intensity	How do you consider the extent of your current Internet use
Satisfaction	Satisfaction is individuals' feelings of pleasure or disappointment resulting from comparing their perceptions of a product or service's performance to their expectation levels. In the final step of satisfaction formation processes, satisfaction determines intentions to patronize or not to patronize the store in the future
Continuity	The intention to continue using the technology
Trust in e-government	Individuals' willingness to rely on e-government websites for obtaining information or conducting government transactions based on the feelings of confidence or assurance.
Trust in Internet	Individuals' willingness to rely on technology based on the feelings of confidence or assurance.

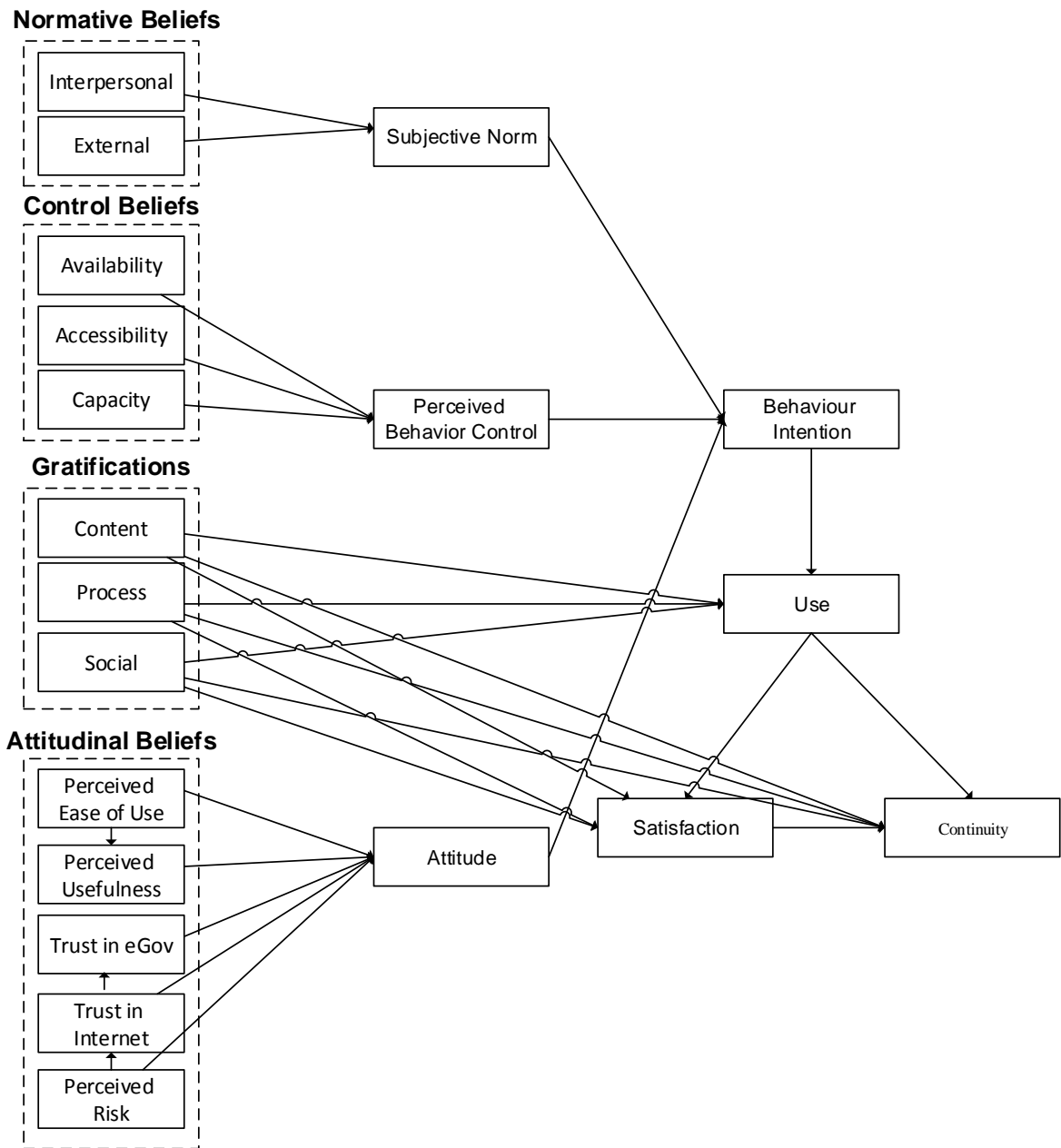


Figure 3.2 The proposed research model

Table 3.6 Constructs measurements

Construct	Code	Measure	Reference
Perceived Ease of Use	PEOU1	Online government service are (would be) easy to use.	Davis (1989)
	PEOU2	Learning to use online government service is (would be) easy for me.	
	PEOU3	I would find it easy to use online government service to do what I want to do.	
	PEOU4	It would be easy for me to become skilful at using online government services.	
Perceived Usefulness	PU1	I would find online government service useful for me.	Davis (1989)
	PU2	Using e- Government service (would) make me more efficient.	
	PU3	Using the online government service (would) make my life easier.	
Compatibility	COMP1	Using the online government services will fit well with the way I work.	Taylor and Todd (1995)
	COMP2	Using the online government services will fit into my work-style.	
	COMP3	The setup of the online government services will be compatible with the way I work.	
	COMP4	I like virtual interaction with e-government website better than personal interaction with physical offices.	
Accessibility	ACC1	I had access to hardware service needed to use online government services.	Kvasny and Keil (2002); Meader et al. (2002)
	ACC2	I had access to software service needed to use online government services.	
	ACC3	I had access to Internet service needed to use online government services.	
Affordability	AFF1	I have the resources, knowledge and ability to buy a computer.	Kvasny and Keil (2002); Meader et al. (2002)
	AFF2	I have the resources, knowledge and ability to buy an Internet connection.	
	AFF3	I would be able to pay for online government services.	
Capacity	CAP1	I would feel comfortable using online government services on my own.	Taylor and Todd (1995)
	CAP2	I would be able to use online government services reasonably well on my own.	
	CAP3	I would be able to use government services even if there was no one around to help me.	
	CAP4	I would be able to use online government services well.	
	CAP5	Using online government services was entirely within my control.	
Availability	AV1	I was constrained by the lack of resources needed to use online government services	Kvasny and Keil (2002); Meader et al. (2002); Taylor and Todd (1995b)
	AV2	Resources required to use online government services were available to me.	
	AV3	I have adequate computer/technology at home/workplace/institution	
	AV4	I always have access to a high-speed Internet connection at home/workplace	
Interpersonal Influence	II1	My peers/colleagues/friends thought I should use online government service.	Taylor and Todd (1995)
	II2	People I knew thought that using online government service is/was a good idea.	
	II3	People I knew influenced me to try out online government services.	

Media Influence	EI1	I read/saw news reports that using the e-government service was a good way to interact with the government	Taylor and Todd (1995)
	EI2	The popular press depicted a positive sentiment for using the online government service.	
	EI3	Mass media reports convinced me to use the online government service.	
	EI4	Expert opinions depicted a positive sentiment for using the e-government service.	
Government Influence	EI5	The government expects me to use the online government services.	Karahanna et al. (1999); Lynne et al. (1995); Stafford and Stafford, (2001, 2004)
	EI6	The government thinks that I should use the online government services.	
Process Gratifications	PG1	Resources (online services and utilities that you use)	Stafford and Stafford, (2001, 2004)
	PG2	Search Engines	
	PG3	Searching (looking for specific information)	
	PG4	Surfing (browsing the web, not necessarily with a specific goal)	
	PG5	Technology (information technology; computer system that you access, learn about, or use when online)	
	PG6	Website	
Content Gratifications	CG1	Education	Stafford and Stafford, (2001, 2004)
	CG2	Information	
	CG3	Knowledge	
	CG4	Learning	
	CG5	Research	
Social Gratifications	SG1	Chatting (live interaction)	Stafford and Stafford, (2001, 2004)
	SG2	Interaction (communication with people)	
	SG3	People (social interaction, in general)	
Attitude	A1	Using online government services would be a good idea.	Taylor and Todd (1995)
	A2	Using online government services would be a foolish idea.	
	A3	I like the idea of using online government services for forms-filling action.	
	A4	Using online government services would be a pleasant experience.	
Perceived Behaviour Control	PBC1	I would be able to use online government services well.	Taylor and Todd (1995)
	PBC2	Using online government services was entirely within my control.	
	PBC3	I have the resources, knowledge, and ability to use the online government services.	
Subjective Norm	SN1	People important to me (peers and experts) supported my use of online government services.	Taylor and Todd (1995)
	SN2	People who influenced my behaviour wanted me to use online government services instead of any alternative means.	
	SN3	People whose opinions I valued preferred that I use online government services.	
Behavioural Intention	BI1	I intend to use online government services within the next 3 months.	Taylor and Todd (1995)
	BI2	It is likely that I will use the online government services.	

	BI3	I expect to use the online government services.	
	BI4	I will regularly use the online government services in the future.	
Use	USE1	On average, how many hours do you use the Internet each week?	Venkatesh et al. (2008)
	USE2	How often do you use the Internet?	
	USE3	How do you consider the extent of your current Internet use?	
User Satisfaction	IS1	I am satisfied with the performance of e-government service	Oliver (1980);
	IS2	I am pleased with the experience of using the e-government service.	Swan and Trawick, (1981)
	IS3	My decision to use the e-government service was a wise one.	
	IS4	My feeling with using the e-government service was better than traditional way.	
Continuity of Internet use	IS5	Assuming that I have access to the Internet, I intend to reuse it.	Swan and Trawick, (1981)
	IS6	I will reuse the Internet in the future.	
	IS7	I will frequently use the Internet in the future.	
E-government satisfaction	GS1	I am satisfied with the performance of e-government services.	Oliver (1980);
	GS2	I am pleased with the experience of using the e-government services.	Swan and Trawick, (1981)
	GS3	My decision to use the e-Government service was a wise one.	
	GS4	My feeling with using e-Government service was better than traditional way.	
Continued Use Intention	GS5	Assuming that I have access to e-government services, I intend to reuse it.	Ajzen (1991)
	GS6	I will reuse e-government services in the future.	
	GS7	I will frequently use e-government services in the future.	
Trust Internet	TI1	The internet has enough safeguards to make me feel comfortable using it to interact with the e-government websites online.	Gefen et al. (2003)
	TI2	I feel assured that legal and technological structures adequately protect me from problems on the internet.	
	TI3	In general, the internet is now a robust and safe environment in which to transact with the e-government websites.	
Trust in e-government	TG1	I think I can trust e-government websites.	Karavasilis et al., (2010)
	TG2	The e-government website can be trusted to carry out online transactions faithfully.	Zafriopoulos et al., (2012)
	TG3	In my opinion, e-government website is trustworthy.	
	TG4	I trust e-government to keep my best interests in mind.	
Perceived Risk	PR1	There is possibility of the online government services malfunctioning and not performing as it was designed and therefore failing to deliver the desired benefits.	Karavasilis et al., (2010)
	PR2	There might be potential monetary outlay associated with using the online government services.	Zafriopoulos et al., (2012)
	PR3	There is a possibility of losing time when using online government services to make an unsuccessful process for instance; form filling process or paying for any service.	

3.5 RESEARCH HYPOTHESES

This section presents in detail the specific research hypotheses, that will enable the research objectives to be explored, and will ultimately give direction to this research study. There are thirty distinct relationships that can be identified from the conceptual framework and it is important to explore these relationships.

The proposed research model includes; six variables affecting attitude, three variables affecting subjective norm, and four variables affecting perceived behavioural control. The selection of these variables is supported by previous studies in IS or e-Inclusion literature. Fig.3.2 illustrates the research model and hypotheses for e-Inclusion in the context of e-government based on U&G and DTPB. The main focus for both theories is explaining user acceptance and use of technology. Citizens' behavioural intention towards e-government use has been usually examined by drawing on the concept of various technology acceptance models without sufficient attention being given to other factors (Lean et al., 2009). In this context, U&G has been quite effective in explaining motivations and needs for using the Internet (Ko et al., 2005; Korgaonkar and Wolin, 1999; Lin, 1999; Papacharissi and Rubin, 2000). The DTPB allows researchers to decompose the attitudinal, normative and control categories to better understand the reasons of adoption and non- adoption (Taylor and Todd, 1995). However, some scholars have criticized user acceptance models for their inability to better account for the factors that explain users' motivations toward technology. For example; Davis (1989) argues that research should also incorporate additional variables that could affect user acceptance. Therefore, in this study we extend DTPB to include motivational constructs from U&G. Moreover, in our proposed conceptualization and hypothesis development we include three additional constructs (perceived trust, perceived risk, satisfaction, and continuity) to better understand the factors that influence citizens' e-inclusion. In this study, U&G focuses on individual levels of psychological needs and motivations. U&G suggests that citizens' selection and continuance use of the Internet activities (specifically, e-government) is based on their needs or gratification. In our conceptualization, we propose that content, process and social gratifications affects citizens' attitude toward using the e-government. We posit that different users are driven by different motivations and the understanding of why people do not adopt or do not use ICT is strongly relevant in the light of the development of an inclusive information society. Thirty hypotheses and their supporting studies are summarized in Table 3.7. The next sub sections discuss these hypotheses in detail.

Table 3.7 Research hypotheses

Hypothesis		Supporting studies
H1	Perceived usefulness → attitude	Davis (1989); Taylor and Todd (1995)
H2	Perceived ease of use → attitude	Davis (1989); Taylor and Todd (1995)
H3	Perceived ease of use → perceived usefulness	Davis (1989); Taylor and Todd (1995)
H4a	Trust in e-government → attitude	Karavasilis et al., (2010)
H4b	Trust in e-government → perceived behaviour control	Zafiroopoulos et al., (2012)
H5a	Perceived risk → attitude	Hung et al. (2006)
H5b	Perceived risk → trust in e-government	Bélanger and Carter (2008)
H6a	Trust Internet → Trust in e-government	Karavasilis et al., (2010) Zafiroopoulos et al., (2012)
H6b	Trust Internet → attitude	Gefen et al. (2003)
H7	Compatibility → attitude	Taylor and Todd (1995) DTPB
H7a	Accessibility → perceived behaviour control	Bandura (1986); Ajzen (1991); Taylor and Todd (1995); Bhattacharjee (2000)
H7b	Accessibility → Use	Kvasny and Keil (2002); Meader et al. (2002)
H8	Capacity → perceived behaviour control	Bandura (1986); Ajzen (1991); Taylor and Todd (1995); Bhattacharjee (2000)
H9	Availability → perceived behaviour control Affordability → perceived behaviour control	Hsieh, Rai, and Keil (2008); Bandura (1986); Ajzen (1991); Taylor and Todd (1995); Bhattacharjee (2000) Kvasny and Keil (2002); Meader et al. (2002)
H10	Media influence → subjective norms	Fishbein and Ajzen (1975); Ajzen (1991); Taylor and Todd (1995); Bhattacharjee (2000); Chu et al. (2004)
H11	Interpersonal influence → subjective norms	Fishbein and Ajzen (1975); Ajzen (1991); Taylor and Todd (1995); Bhattacharjee (2000); Chu et al. (2004)
H12	Attitude → behaviour intention	Ajzen (1991); Ajzen (2001); Liao et al. (1999); Chau and Hu (2001); Chau and Hu (2002); Taylor and Todd (1995); Bhattacharjee (2000); Mathieson (1991); Hsieh et al. (2008)
H13	Perceived behavioural control → behaviour intention	Ajzen (1991); Ajzen (2001); Liao et al. (1999); Chau and Hu (2001); Chau and Hu (2002); Taylor and Todd (1995);
H14	Subjective norms → behaviour intention	Ajzen (1991); Ajzen (2001); Liao et al. (1999); Chau and Hu (2001); Chau and Hu (2002); Taylor and Todd (1995);
H15a	Content gratifications → Use	Lue et al. (2006)
H15b	Content gratifications → Satisfaction	Oliver (1980); Swan and Trawick, (1981)
H15c	Content gratifications → Continuity	Swan and Trawick, (1981)
H16a	Process gratifications → Use	Lue et al. (2006)
H16b	Process gratifications → Satisfaction	Oliver (1980); Swan and Trawick, (1981)
H16c	Process gratifications → Continuity	Swan and Trawick, (1981)
H17a	Social gratifications → Use	Stafford and Stafford, (2001, 2004)
H17b	Social gratifications → Satisfaction	Oliver (1980); Swan and Trawick, (1981)
H17c	Social gratifications → Continuity	Swan and Trawick, (1981)
H18	Behaviour intention → Use	Lue et al. (2006)
H19a	Use → Satisfaction	Venkatesh et al. (2012)
H19b	Use → Continuity	Swan and Trawick, (1981)
H20	Satisfaction → Continuity	Swan and Trawick, (1981)

3.5.1 Attitudinal Beliefs

Users' attitude toward Internet activities specifically e-government services is measured with the use of six beliefs; perceived ease of use, perceived usefulness, compatibility, trust in e-government, trust in Internet, perceived risk.

3.5.1.1 *Perceived Usefulness (PU)*

According to Davis (1989) PU is the extent to which the use of the product will enhance one's performance in performing a task. Previous IS research has identified two beliefs that influence the acceptance of new IT: perceived usefulness and ease of use (Davis, 1989; Taylor and Todd, 1995). The suggested statements are that both individual perceived usefulness and ease of use are important determinants of individual acceptance of information technology. The findings of many empirical investigations (Davis, 1989; Taylor and Todd, 1995) also have indicated that ease of use can prompt individual acceptance of IT both directly and indirectly through the influence of perceived usefulness. The effect of PU on intentions over the attitude had been shown by (Davis, 1989). Therefore, the first hypothesis of this study is as follows:

H1: Perceived usefulness significantly influences attitudes towards the use of e-government service.

3.5.1.2 *Perceived Ease of Use (PEOU)*

Davis (1989) defined perceived ease of use as the extent to which the use of a product will be free of effort. Over the past decades a considerable amount of research supported the significant effect of PEOU on behavioural intention, either directly or indirectly through its effect on perceived usefulness (e.g., Davis et al., 1989; Hu et al., 1999; Jackson et al., 1997; Venkatesh, 1999) or its effect on attitude (Davis, 1989; Taylor and Todd, 1995). Davis et al. (1989) proved that PEOU influenced intentions over attitudes. Based on this, the following is proposed:

H2: Perceived ease of use will significantly influence the perceived usefulness of e-government.

H3: Perceived ease of use will significantly influence the attitude toward e-government use.

3.5.1.3 *Trust in e-government (TG)*

Political-party based trust plays a role in the attitudes of the citizens by enhancing their expectations of the outcomes. Ajzen and Fishbein (1972) formulate attitudes as a factor of outcome expectations

and outcome values. Thus by manipulating expectations it is possible to manipulate attitudes. It has also been empirically shown in both e-commerce (Gefen *et al.*, 2003; Pavlou, 2003; Pavlou and Fygenson, 2006) and e-government (Carter and Bélanger, 2005; Carter and Weerakkody, 2008) that party based trust plays an important role. According to Pavlou and Fygenson (2006) trust in e-government also influences PBC through reducing the complexity and increasing the perceived control over the situation. Based on this, the following is proposed:

- H4a:** Trust in e-government providing the e-government service will significantly influence the attitude toward the use of e-government service.
- H4b:** Trust in e-government providing the e-government service will significantly influence the perceived behaviour control of e-government service.

3.5.1.4 Perceived Risk (PR)

Some researchers have suggested that individuals become alarmed about different types of risks when engaged in Internet activities, especially if it involves an online transaction process (Gefen *et al.*, 2003; Featherman and Pavlou, 2003). The definition of perceived risk is viewed as a belief that attenuates when trust is present (Gefen *et al.*, 2003). Moreover, trust is reduced as perceived risk increases. Risk comes to mind as a natural extension of trust and it has also been included in a number of studies (Gefen *et al.*, 2002; Pavlou, 2003; Belanger and Carter, 2008) but a consistent result could not be derived. Also as pointed by Pavlou (2003) the direction of relation between risk and trust is unclear and the effects of risk can be mediated in Trust or the two may seriously overlap. Thus the inclusion of risk would require caution. Based on this, the following is proposed:

- H5a:** Perceived risk significantly influences attitudes towards use of Internet activities specifically e-government service.
- H5b:** Perceived risk significantly influences trust in e-government.

3.5.1.5 Trust in Internet (TI)

Institutional trust refers to a perception of safety caused by the environmental conditions surrounding the transaction. The environment in which the interaction and transactions take place when using e-government services is generally the Internet. Thus this construct was named Trust in Internet. The proposed hypotheses for trust in government were based on the nature of trust itself and are expected to hold for trust in Internet. In other words, if a citizen perceives the safety measures – such as encryption of sensitive data, or the legal frame work surrounding online transactions – he will be more likely to use the e-government service. Belanger and Carter (2008) list the lack of trust as one

of the factors impeding the adoption of e-government services. Based on this, the following is proposed:

H6a: Trust in internet will significantly influence trust in e-government.

H6b: Trust in internet will significantly influence attitude to use e-government service.

3.5.1.6 Compatibility (COMP)

Compatibility is the degree to which the innovation fits with the potential adopter's existing values, previous experience and current needs (Rogers, 1983). Tornatzkey and Klein (1982) find that an innovation is more likely to be adopted when it is compatible with the job responsibilities and value system of the individual. Taylor and Todd (1995) noted that increased compatibility of information technologies leads to a more positive attitude towards information systems usage. Therefore, it may be expected that compatibility relates positively to adoption and the more one uses the Internet, the more one perceives it to be compatible with one's lifestyle. Based on this, the following is proposed:

H7: Compatibility significantly influences attitude towards e-government services.

3.5.2 Control Beliefs

Recent studies highlighted the need for improvement in explaining attitudes and perceived behaviour control (PBC). Pavlou (2006) demonstrated that the role of PBC is still not well understood. Another study by Ozkan and Kanat (2011) had also mention the need to enhance the explanatory power of the model ,specifically explaining attitudes and PBC, either by elicitation of salient beliefs or by more constructs derived from the literature. Moreover, online consumer nowadays face several constrains, such as the impersonal nature of the online environment, the extensive use of IT, and the uncertainty of the open Internet infrastructure. These issue call for inclusion of PBC in adoption and e-inclusion models (and the use of TPB rather than TRA or TAM). Indeed, neglecting PBC and relying on simpler models may lead to e-inclusion models that are incomplete and potentially misleading (Pavlou and Fygenson, 2006).

This study sheds light on the nature and role of PBC by identifying constructs derived from e-inclusion literature. PBC in this study is decomposed into four important behavioural control factors: capacity, affordability, accessibility, and availability.

3.5.2.1 *Accessibility (ACC)*

Accessibility in this study refers to the ease with which individual can locate software, hardware, and high speed Internet connection required to engage in a behaviour from any location, at any time of the day. Beliefs regarding to the access to technology affect the PBC through controllability beliefs of the citizens. Kling and Elliott (1994), defined accessibility as the ease with which individual can locate specific computer systems. User perceptions of accessibility have been found to be related to technology and information use in both organisational communications and information systems research (Culnan, 1984; Culnan, 1985; Karahanna and Straub, 1999). According to Culnan (1985), accessibility has a number of dimensions such as the access to interface with the source, and the capability of physically retrieving important information. However, previous research has suggested that physical access to information is not dependent on the access to an information system (Culnan, 1984). The issue of access to achieve digital inclusion has gained momentum over the years. Physical access which is the first level of exposure to (ICT) has been largely achieved. However, physical access only does not guarantee the use of information systems. Therefore, the following hypothesis is formulated:

H8: Accessibility will significantly influence the perceived behaviour control of e-government service.

3.5.2.2 *Capacity (CAP)*

Capacity refers to an individual's self-confidence in his ability to perform a behaviour. Capacity has long been suggested as the key determinant for behavioural control (Bandura 1977) and for ICT implementation (Compeau and Higgins 1995). Moreover, Eastin and LaRose (2000) have argued that capacity is critical in understanding digital inequality. Empirically, studies have revealed that capacity affects ICT usage (Eastin and LaRose 2000) and that a lack of confidence is one of the most important factors preventing the disadvantaged from accessing and using ICT (see Bishop et al. 2001; Crump and McIlroy 2003). Moreover, an individual with the self-assured skill to use a computer and the Internet is more motivated to adopt advance Internet activities (e.g. e-banking, e-commerce, and e-government). Therefore, the following hypothesis is formulated:

H9: Capacity will significantly influence the perceived behaviour control of e-government service.

3.5.2.3 *Availability (AV)*

Availability refers to the availability of financial resources needed to engage in behaviour. It includes adequate hardware, platforms and high speed Internet connection required to engage in behaviour. Prior digital inequality studies have indicated that cost and availability are barriers that prevent people, especially the disadvantaged, from successfully using ICT (Lenhart 2002). Given that government digital inequality initiatives tend to support the financial expenditure of ICT access, this study considers both availability and affordability. Availability, or the accessibility of the technology when needed, represents another behavioural barrier, especially for the socio-economically disadvantaged. In many situations, technological access is provided in theory; but in practice, the technology may not be available when people want to use it. Moreover, when there are more users than units of technologies, or the competition for access is high, availability can surface as a behavioural barrier. If such availability constraints emerge for ICT implemented through a governmental digital inequality intervention, the disadvantaged's lower disposable economic and material resources puts them in a weaker position to address it. Such a constraint is, therefore, expected to have a greater influence on PBC.

H10: Availability will significantly affect the perceived behaviour control of e-government service.

3.5.2.4 *Affordability (AFF)*

Affordability refers to the availability of financial resources needed to engage in behaviour. According to TPB, perceived behaviour control is defined as the individual perception of how easy or difficult it is to perform a specific behaviour. Thus, perceived behaviour control reflects individual perceptions of internal and external behavioural constraints (Ajzen, 1991). Taylor and Todd (1995) found that individual-perceived facilitating resources, such as time and money, influence perceived behaviour control toward IT acceptance. Furthermore, Bhattacharjee (2000) found that facilitating resources are an important predictor of perceived behaviour control. Prior digital inequality studies have indicated that cost and availability are barriers that prevent people, especially the disadvantaged, from successfully using ICT (Lenhart 2002). Based on such evidence, this study proposes the following hypothesis:

H11: Affordability will significantly influence the behavioural intention to use e-government.

3.5.3 Normative Beliefs

Fishbein and Ajzen (1975) defined subjective norms as perceptions of the preferences of significant others regarding the worth of engaging in a specific behaviour. Moreover, Ajzen (1991) suggested that subjective norms refer to individual perceptions of social pressure on whether or not to perform a particular behaviour. These two perspectives indicate that the determinants of the subjective norm cover the preferences of significant others, and other social factors. Previous research on TPB supports this contradiction by showing that interpersonal influence and external influence can significantly affect perceived behavioural control in accepting new IS (Taylor and Todd, 1995; Bhattacharjee, 2000). Based on the framework proposed by previous TPB studies, both interpersonal influence and external influence are seen as external variables that affect the users' subjective norms to accept new IS (Taylor and Todd, 1995; Bhattacharjee, 2000). Correspondingly, several TPB empirical studies have found significant relationships between subjective norms and IT acceptance (Harrison et al., 1997; Song and Zahedi, 2005; Pavlou and Fygenson, 2006; Taylor and Todd, 1995; Bhattacharjee, 2000). Moreover, DTPB considered two constructs Peer Influence and Superior Influence within the normative category. But in the proposed model, superior influence is differentiated by two types of influences, which are 'Media Influence' and 'Government Influence'. Subjective norms in this study are decomposed into three beliefs: interpersonal influence, media influence, and government influence.

3.5.3.1 *Interpersonal Influence (II)*

Interpersonal influence refers to the perceived expectation from family, relatives, friends and peers for an individual to perform the behaviour of interest. Evidence suggests that key members from one's social network may exert normative influence upon one's innovation behaviour (Valente 1995), since they have more chances to exchange important information (Childers and Rao 1992; Cocanougher and Bruce 1971). Such members may include family, relatives, friends, and peers (Childers and Rao 1992). Interpersonal influence is direct in nature and exerted by friends, peers, family members and relatives who are expected to have a strong influence when performing certain behaviour. Therefore, the following hypothesis is formulated:

H12: Family, relatives, friends, and peers' influence significantly affects the subjective norms.

3.5.3.2 *Media Influence (EI)*

Media influence refers to the perceived expectation from the media for individuals to perform the behaviour of interest. Previous studies suggest that messages disseminated using mass media, such as the television (TV) and newspaper advertisements (secondary sources of information) are likely to influence an adopter's intentions (Rogers, 1995; Venkatesh and Brown 2001). For the purposes of this research, it is expected that secondary sources of information will affect those consumer who have already adopted broadband but are not satisfied with service quality; hence, if advertisements viewed on TV or read in a newspaper advertisement about broadband packages that are economical and offer a better quality service, then they are more likely to cause adopters to contract with the new provider. Based on the above, the following hypothesis is proposed:

H13a: Media influence significantly affects the subjective norms.

3.5.3.3 *Government Influence (EI)*

Government influence refers to the perceived expectation from the government institutions for individuals to perform the behaviour of interest. According to DiMaggio et al. (2001), government institutions are essential in facilitating the diffusion of ICT innovation and reducing digital inequality. Not many digital inequality studies have examined governmental influence on individual ICT innovation behaviour, although researchers have highlighted the need to study such effects (DiMaggio et al. 2001; Kvasny 2002). Governments that are concerned about digital inequality usually expect these interventions to help citizens, particularly the disadvantaged, access and use ICT, develop digital skills for work opportunities, and eventually attain improvements in quality of life (See, Crump and McIlroy 2003; Kvasny 2002; Van Winden 2001). Studies suggests that systematic approaches can be used by the governments in order to raise awareness and interest among citizens about these initiatives. Different media channels can be used, including communicating directly with citizens, in order to explain the benefits of using ICT and to offer training and technical support (e.g., Kvasny 2002; Van der Meer and Van Winden 2003). From the citizen's perspective, these institutional efforts to encourage and facilitate ICT use carry the message that the government is committed to their interests and has taken their needs and requirements into consideration (Kvasny 2002). Moreover, previous research has revealed that government agencies may serve as significant referents whose expectation affects individual innovation acceptance (Lynne et al. 1995). Therefore, governmental expectation may effect individuals' ICT innovation behaviour. Within this research, the governmental influence construct captures the perceived governmental expectation. Given these arguments, the following hypothesis is proposed:

H13b: Governmental influence significantly affects the subjective norms.

3.5.4 Gratifications

U&G was first developed in research in the effectiveness of radio communication in the 1940s. It is largely intended to identify the psychological needs that motivate the use of a particular medium to gratify those needs (Ko. et al, 2005). According to Katz et al. (1974), a gratification is a goal-directed subjective evaluation that can be self-reported and assessed by the active audience, or user. Blumler and Katz (1974) suggest that people actively search out media messages to satisfy certain needs, rather than being passive receivers of information. Blumler and Katz suggest that being able to seek out and gather information provides people a sense of control.

Early in the history of communications research, U&G approach was developed to study the gratifications that attract and hold audiences to the kinds of media and the types of content that satisfy their social and psychological needs (Cantril, 1942). U&G is a media use paradigm that investigates into the reasons why people use certain media and the gratifications derived from usage and access. It posits that media consumption is purposive, and that users actively seek to fulfil their needs via a variety of uses (Katz et al., 1974). U&G has been considered a useful approach for understanding users' motivations in the context of traditional media, such as TV and radio (Mendelsohn, 1964; Cantril, and Allport, 1935; Rubin, 1983). Advertising and marketing researchers applied U&G to “novel media”, such as cable television, video recording and TV/VCR remote control devices; further, studies have explored U&G applications in non-traditional media such as e-mail (Dimmick et al., 2000), Internet use (Chen and Wells, 1999; Eighmey and McCord, 1998; Eighmey, 1997; Fenech, 1998; Korgaonkar and Wolin, 1999; Stafford and Stafford, 1998; Stafford and Stafford, 2001; Ko et al., 2005), World Wide Web (Lin, 1999) and wireless advertising (Peters et al., 2007).

U&G builds upon the assumption that people select the medium that best fulfils their needs (Katz et al., 1974). Its point of departure is that “the media choices that people make are motivated by the desire to satisfy a wide variety of functions . . . the research on uses and gratifications has been concerned with identifying the specific gratifications satisfied by the use of media” (Cho et al., 2003). Moreover, from the earliest to the most recent applications, U&G has proven reliable for constructing profiles of intended use and resulting user satisfaction. According to Liang et al. (2006) the U&G approach is a “how and why” approach to understand media use motivation, as gratification is defined by users as the satisfaction of actively using the medium in question.

Recently, the U&G has been the basis of most attempts at classifying the range of Internet uses and one of the approaches for explaining how people use media and it has also influenced other areas of research. U&G has been experiencing resurgence and application to a number of fields due to its applicability to the Internet (Morris and Ogan, 1996; Kaye and Johnson, 2002; Cuillier and Piotrowski, 2009; Luo et al., 2011; Huang, 2008; Ku et al., 2013; Shin, 2009; Sepp et al., 2011; Stafford et al., 2004). In the U&G, researchers assume that it is the differences between individuals' characteristics and needs that determine who uses the Internet for what.

A large body of literature suggests that motivations predict media usage and that media usage influences gratifications/satisfaction (Burgoon and Burgoon, 1980; Ferguson and Perse, 2000; Ko et al., 2005; LaRose and Atkin, 1988; Palmgreen et al., 1981; Papacharissi and Rubin, 2000; Rayburn et al., 1984; Rubin, 1983). The motivations identified in U&G studies are more diverse than those in other motivational model studies (See for example, Luo, 2011).

A common strategy to examine the ways in which people engage with media is to classify content into different categories and then describe which types of people or groups of people use the media in ways that correspond to these categories. The uses and gratifications (U&G) framework is most commonly associated with this approach (Katz and Aspden 1997; Rosengren, 1985). U&G-based approaches to media use start from the idea that individuals have different needs and that they choose specific media to gratify these needs. Self-reports in surveys are used to measure the needs that people have (Rubin 2008), and statistical methods such as factor analysis are used to classify types of uses (Dobos and Dimmick 1988).

In traditional broadcast media research, uses of media have been classified according to two main functions: instrumental or cognitive (e.g., information seeking) and ritual or affective (e.g., entertainment, passing time) (Dobos and Dimmick 1988; Rubin 2008; Weiser 2001). Moreover, previous U&G research on traditional and new media has revealed two typical motives for media consumption, namely, information seeking and entertainment (see Graber, 1993; Katz et al., 1974; Korgaonkar and Wolin, 1999; McQuail, 1983, 2000; Zillmann and Bryant, 1985). Information seeking is driven by people's desire to increase awareness and knowledge of one's self, others, and the world. This can be seen from the fact that people often visit Wikipedia to get some information about subjects that specifically interest them. It is also observed that people increasingly make use of social media to "learn how to make sense of things from their peers on just about any subject" (Bowman and Willis, 2003, p. 40). Other U&G studies have identified motivations include information seeking, entertainment, escapism, and social relations (e.g., Armstrong and McAdams,

2009; Courtois et al., 2009; Kaye and Johnson, 2004; Loonam and O'Loughlin, 2008; Papacharissi and Rubin, 2000).

After the emergence of Internet as a popular medium, researchers started to study motives in the context of the Internet, and motives became a recommended metric for the e-consumer experience (Chen and Wells, 1999; Eighmey and McCord, 1998; Korgaonkar and Wolin, 1999; Stafford and Stafford, 2001). U&G studies on the Internet have identified a set of common underlying dimensions of Internet usage motivations that reflect the inherent interactivity and user-directed nature of Internet media. These findings also suggested that the U&G approach provides the theoretical framework for understanding what specifically drives user adoption of the Internet.

The Internet, in many ways, is a unique medium and this has not escaped the attention of researchers. Unlike traditional media such as television and newspapers, the Internet provides users the ability to actively seek out specific information any time and just about anywhere, to fulfil personal needs for information control (Ferguson and Perse, 2000). The Internet possesses unique characteristics, including machine interactivity, telepresence, hypermedia, and network navigation, that distinguish it from traditional media and some other interactive multimedia (Morris and Ogan, 1996) these characteristics gratify entertainment and information needs (Ruggiero, 2000; Stafford et al., 2004). Because of these unique characteristics, researchers have stressed the need to develop a rigorous research framework for both theory and practice.

Scholars increasingly have been applying a uses and gratification approach when studying Internet use, examining the multitudes of needs fulfilled by the Internet. The list of gratifications derived from early television studies (Greenberg, 1974; Rubin, 1983) has been expanded to explore unique facets of the Internet medium. For example, Papacharissi and Rubin (2000) proposed interpersonal communication gratifications, recognizing that communication functions like e-mail and chat rooms are common modes of Internet usage. Korgaonkar and Wolin (1999) found dimensions of information, interactive, and economic control. Other new gratification dimensions have included: problem solving, persuading others, relationship maintenance, status seeking, and personal insight (Flanagin and Metzger, 2001); Song et al.'s (2004) virtual community gratification; Charney and Greenberg's (2001) coolness, sights and sounds, career, and peer identity factors; and Stafford and Stafford's (2001) search and cognitive factors.

Numerous studies (e.g. Charney and Greenberg, 2001; Chou and Hsiao, 2000; Dimmick et al., 2000; Eighmey and McCord, 1998; Ferguson and Perse, 2000; Flanagin and Metzger, 2001; Kaye, 1998;

Korgaonkar and Wolin, 1999; LaRose et al., 2001; Lin, 1999; Papacharissi and Rubin, 2000; Parker and Plank, 2000; Perse and Greenberg-Dunn, 1998; Song et al., 2004; Stafford and Stafford, 2001) have applied uses and gratifications to the Internet. Many Internet researchers started to apply factor analyses to understand which categories of use exist and whether Internet use can be classified in the same ways as the uses of traditional media (See Table 3.4 Uses and gratifications studies in IS research). They mostly come up with the same basic categories, information seeking and entertainment, and often an additional social use category (Eighmey and Mc-Cord 1998; Papacharissi and Rubin 2000; Song et al., Lin 2004; Stafford, Stafford, and Schkade 2004).

James et al. (1995) identified gratification in online activity as the satisfaction of needs for surveillance, personal identity, information learning, socialization, escape, entertainment and interaction. Rapid growth of the Internet is the major cause of increased Internet use in recent years. Internet content has become increasingly more useful and more accessible than before (Stafford and Stafford, 2001). Online shopping has also become more convenient, streamlined and customer-oriented than previously (Stafford and Stafford, 1998; Ko et al., 2005). Most literature in Internet use classify Web surfing behaviour into two styles of navigation. Examples are goal-oriented v. experimental, surfing v. searching, hedonistic v. utilitarian, sensory v. functional or play v. work (Chen and Wells, 1999). Wolfenbarger and Gilly (2001) found that e-consumers tend to be more goal-oriented than experience-oriented while shopping.

Papacharissi and Rubin (2000) proposed five primary motives for using the Internet: interpersonal utility, pastime, information seeking, convenience and entertainment. Lin (2007), however, asserted that surveillance is the most significant motivation for visiting information and infotainment Websites whereas entertainment and surveillance are the most significant motivation for visiting shopping sites. Luo (2002) investigated how informativeness, entertainment and irritation affect various online consumer behaviours.

Other categories, which have been identified consistently over time, to measure Internet use are information, social/communication, entertainment, and financial/commercial engagement (Ayhan and Balci, 2009; Eastin, 2005; Kargaonkar and Wolin, 1999; Raban, 2004; Song et al., 2004; Helsper and Gerber, 2012, Helsper and Galacz 2008). These studies argue that it is possible to make more fine grained distinctions within these categories and include a wider variety of uses.

To clarify the important Internet communication processes and user interactions, U&G provides a user-level perspective rather than a mass-exposure perspective (Rayburn, 1996). A basic assumption

of U&G is that users are actively involved in media usage and interact extensively with communication media. Given the inherent interactive and user-directed nature of Internet, U&G is particularly appropriate for investigating consumer Internet use.

Although many Internet studies have identified different dimensions or categories to measure Internet motives and gratification, one of the issues for current researchers is that the Internet studied at the beginning of the 21st century is different from the Internet a decade later. For example, in 2007 social networking was a “to do” activity for the first time, while later on, it had become common place and Twitter became the latest “to do” activity in many countries (Boyd and Ellison 2008; Dutton et al., 2009; Livingstone 2008). Anderson and Tracey (2002) therefore argue that the Internet should not be studied as a single unit, as it is a “delivery mechanism for a range of services that are continually evolving and are used differently by different people” (462). The fact that both activities and user problems rapidly change on the Internet could be problematic when creating classifications of Internet use (Centre for the Digital Future 2009; Dutton et al., 2009; Pew Internet and American Life Project 2010). Classifications used for previous generations of Internet users thus cannot be automatically applied as a template for more studies on current Internet users, even if the same measures/items are used. For example, browsing might still be browsing, but on a higher level it might have changed from fulfilling an information function to fulfilling an entertainment function. Therefore, it seems that there are as many classifications of Internet use as there are studies and that classifications and their interpretation have changed over time.

Research in Internet use and its correlates is still evolving and often conflicting (Uslaner, 2004; Jennings and Zeitner, 2003; Delli Carpini, 2000; Shah, McLeod, and Yoon, 2001; Johnson and Kaye, 1998, 2003; Shah et al., 2002). A growing amount of research suggests that motivation and types of Internet usage are critical factors that impact Internet use. According to Van Dijk et al. (2008), Dutch citizens were more likely to use government Internet services if they were familiar with the services and information available online.. Moreover, further use and efficacy in using the Internet for more information-seeking behaviour is caused when someone is gratified by a positive outcome, such as finding specific information. For example, it is more likely for the people who use the Internet for information gathering purposes to view access to government information as important. Previous research supports this proposition. According to LaRose and Eastin (2004) the perceived ability of the Internet to improve one's lot in life was a strong factor in use of the Internet..

Many researcher indicates that political efficacy, political knowledge, and political participation are positively associated with Internet use (Kenski and Jomini Stroud, 2006; Pierce and Lovrich, 2003),

and higher interest in politics has been found positively related to information- seeking online (Kaye and Johnson, 2002). It has been found that people who use Internet for gathering information have higher social capital than those who use it for entertaining purposes (Shah, Kwak et al., 2001; Shah, McLeod et al., 2001). Consequently, people who use the Internet for seeking news and information are more likely to exhibit greater support for democratic principles such as freedom of information because they see the practical value of open government records for understanding the political process and aiding their personal lives.

Among the media/IT acceptance theories (e.g., diffusion of innovation (Rogers, 1983), technology acceptance model (Davis, 1989), and theory of planned behaviour (Ajzen, 1991), U&G is distinct in its applicability to media of all kinds (Lin, 1999). The U&G paradigm's comprehensive nature enables us to understand electronic communication in a media environment (Stafford et al., 2004).

A comparison done by Luo et al. (2011) between motivational model and U&G, to understand the nature of the two theories in the context of online news services, conclude that U&G explains behavioural usage better than MM does. Moreover, U&G differs from the technology acceptance theories because it posits motivational variables directly influence behavioural usage without the mediation effects of attitude or behavioural intention. This provides another frame of reference to look at the acceptance and usage of IT from purely motivational perspectives.

This research aims to push the boundary of the technology acceptance models by introducing a new theoretical perspective and to provide empirical evidence for this new theoretical perspective.

Comparisons of different models are important as they can help researcher determine which models are more appropriate under different use contexts (Hong et al., 2006; Mathieson, 1991; Taylor and Todd, 1995). The author contribute to the technology usage literature by providing empirical evidence that supports U&G theory's ability to better explain usage behaviour over other acceptance model in the context of e-Inclusion and e-government.

U&G delivers very specific information (on the type of motivations). It identifies entertainment, information seeking, and interpersonal utility motives as being crucial in the use of information services. Typically, these motivations of media usage are derived from users' perceptions towards the content of the media. In other words, the need for information, the need to experience fun or pleasure, and the need to share information can be fulfilled by media content consumption. These aspects, however, are not specifically addressed in other acceptance model.

The closest motivational variable that addresses the intrinsic motivations in MM is perceived enjoyment, which refers to the belief that the process of using the IS is enjoyable. We therefore conclude that U&G is more specific on intrinsic motivation while MM is more specific on extrinsic motivation (i.e. perceived usefulness and perceived ease of use which are already exist in the proposed model)

Gratifications in this research were categorised according to the gratification types presented by Stafford et al. (2004) into content, process, and social gratifications. Stafford et al. (2004) describe U&G as a paradigm that helps to assess consumer motivation for media usage and access. Stafford et al. (2001, 2004), achieved a modest increase (to 21%) in the variance explained in Internet usage, mostly from the addition of a search factor (i.e., that accessing search engines was an important motivation for using the Internet) to more conventional information seeking and entertainment gratifications.

Stafford et al. (2004) point out that most Internet uses and gratification studies have focused on content (information and entertainment) and process (information search), rather than social gratifications (people and interactions). The classification will be modified by using factor analysis and new social media activities are added to the classification (e.g. twitter, Instagram, Facebook, and Keek). Since these are recent classifications it is not possible to discuss how these types of uses have developed, simply because some of them were not measured before. Based on the aforementioned literature on U&G, the following subsection presents the gratifications hypotheses.

3.5.4.1 *Content Gratifications*

Content gratifications concern with the content carried by a medium. Four gratifications are classified as content gratifications in this research: information, learning, education, knowledge, and research.

H14a: Content gratifications will significantly affect actual use behaviour

H14b: Content gratifications will significantly affect use satisfaction

H14c: Content gratifications will significantly affect continued Use Intention

3.5.4.2 *Process Gratifications*

Process gratifications concern with the actual use of the medium itself. Six gratifications are classified as process gratifications in this research: resources (online services and utilities that is used), search engines, searching (looking for specific information), surfing (browsing the web, not necessarily with

specific goal), and technology (information technology, computer system accessed, learn about, or use when being online).

H15a: Process gratifications will significantly affect actual use behaviour

H15b: Process gratifications will significantly affect satisfaction

H15c: Process gratifications will significantly affect continued use Intention

3.5.4.3 *Social Gratifications*

Social gratifications concern with the interaction when using the medium. Three gratifications are classified as social gratifications in this research: chatting (live interaction), interaction (communication with people), and people (social interaction, in general).

H16a: Social gratifications will significantly affect actual use behaviour

H16b: Social gratifications will significantly affect satisfaction

H16c: Social gratifications will significantly affect continued use Intention

3.5.5 Dependent Variables

The research model proposes several modifications through replacing and incorporating additional constructs and variables from DTPB, U&G theory, and other e-Inclusion related literature. The core concept of proposed model is that subjective norms, attitude, and perceived behaviour control will influence an individual's intention to use advance Internet activities (e.g., e-government, e-banking, e-shopping), which will ultimately influence actual usage behaviour. Behavioural intention is defined as the person's subjective probability that he will perform the behaviour in question (Fishbein and Ajzen, 1975), and is thus dealing with future behaviour. The model also considers both the actual use behaviour and the continued use intention.

In both TPB and DTPB models, attitudes toward behaviour, subjective norms, and perceptions of behaviour control are generally found to accurately predict individual behavioural intentions. Prior research on TPB supports this assertion, demonstrating that attitudes, subjective norms, and perceived behavioural controls can significantly affect the intention to use new IS (Taylor and Todd, 1995; Bhattacharjee, 2000; Mathieson, 1991). In the field of public administration and e-government, Hung et al. (2006) also proposed that attitudes, subjective norms, and perceived behavioural controls significantly affect the non-mission-oriented e-government services. Accordingly, this study proposes the following hypotheses:

H17: Attitude will significantly influence behaviour intention

H18a: Perceived behaviour control will significantly influence behaviour intention

H18b: Subjective norms will significantly influence intention behaviour intention

Actual usage behaviour is influenced directly by behaviour intention, content gratifications, process gratifications, and social gratifications. Moreover, use and user satisfaction are closely interrelated. Positive experience with “use” will lead to greater “user satisfaction”. Therefore, satisfaction was integrated to the model. Satisfaction is a common measure of IS adoption success (Lin, 2008; Zviran and Erlich, 2003). Satisfaction refers to the outcome of actual usage and it is an important predictor of the continued use Intention. Actual use behaviour is identified as one of the major indicators for IS success and is often correlated with satisfaction (Wu and Wu, 2005). In other word, it is conceptualized as the effective reactions of individuals toward the usage of ICT applications (Al-Gahtani and King, 1999; Luo et al., 2006). Venkatesh et al. (2003); Wixom and Todd (2005); Luo et al. (2006) suggested that future technology adoption researches should study the degree to which systems perceived as successful. A number of technology adoption studies using TAM have employed user satisfaction as a measure of acceptance and adoption success (Wixom and Todd, 2005; Lin, 2008; Luo et al., 2006; Adamson and Shine, 2003). Therefore, this study proposes the following hypotheses:

H19: Behavioural intention will significantly affect actual use behaviour

H20: Use behaviour will significantly affect satisfaction

H21: Use behaviour will significantly affect continued use Intention

H22: Satisfaction will significantly affect continued use Intention

3.6 CHAPTER SUMMARY

This chapter presents the proposed model to examine the factors that influence e-inclusion by combining two theories, the Use and Gratification Theory (U&G) with the Decomposed Theory of Planned Behaviour (DTPB).

The chapter started with identifying six research gaps. Then the foundation of the proposed conceptual model was presented. Uses and gratifications theory (U&G), decomposed theory of planned behaviour (DTPB), perceived trust, and perceived risk were discussed. This is followed by the conceptual framework. The last section (section 3.5) discussed the research hypotheses in detail.

It composed of five sub-sections covered the following; attitudinal beliefs, control beliefs, normative beliefs, gratifications, and the dependent variables. Finally the chapter summary was presented.

This chapter contributes to the evolving literature on e-Inclusion. The refinement of the variables that can be used to assess e-Inclusion and will thus contribute towards addressing these gaps in the literature and current e-Inclusion research was presented. Explanations represented in the existing body of research will help in propose a model to examine e-Inclusion and better understand the factors influence e-Inclusion. A big challenge was to grasp the e-Inclusion issues in their complexity without losing the ability to propose efficient steps to improve the current gaps in research. The lack of conceptual definitions and theoretical frameworks for e-Inclusion has prevented the development of reliable measurements and identification of specific factors that influence e-Inclusion. Further, this research has attempted to highlight the growing interest in engagement with social, cultural, political and economic factors that influence ICT adoption in the information society. It consolidates the argument that views e-Inclusion as the development of a sustainable participatory information society for all. The main attention was on complicated Internet activities such as e-government services and how the increase in these services poses new challenges with regards to digital and social inclusion. Moreover the study contribute to the technology usage literature by providing empirical evidence that supports U&G theory's ability to better explain usage behaviour over other acceptance model in the context of e-Inclusion and e-government.

CHAPTER 4: RESEARCH METHODOLOGY

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 INTRODUCTION

The prior chapter developed a conceptual model that is aimed at examining the factors influencing e-inclusion in the context of e-government from citizen's perspective. In the previous chapter, six research gaps were identified after reviewing the two related domains of this study; the e-inclusion domain and the e-government adoption domain. Moreover, a conceptual framework and a number of specific research objectives were also presented, from which 25 distinct research hypotheses were derived. This chapter aims at provide an overview of the research approaches which leads to selection of an appropriate research approach for guiding the validation of the conceptual model.

This chapter outlines how the research was carried out by discussing the philosophy, design, approach and techniques that were used to collect valid data. A quantitative research was employed to understand the research topic, validate the conceptual model and collect the data. Positivist was the philosophical foundation used to guide this study. A survey research approach was employed for testing the hypotheses and evaluating the performance of the proposed theoretical model. The data collection technique used to collect the data was the questionnaire. Reasons for the aforementioned selection are explained and justified within this chapter.

This chapter is structured as follows: Initially, Section (4.2) discusses the different research philosophies and justifies the positivist approach as the suitable epistemology for this research. This is followed by the research design and overview discussion on various issues related to the available research approaches in the information systems (IS) field. Section (4.4) explores the different research approaches including quantitative, qualitative and mixed method and justifies the quantitative research as the suitable approach for this research. Section (4.5) provides an overview of types of research data and justifies the selection of the primary data. A detailed account of the various aspects of the survey approach, sampling frame, sampling technique, and sample size are properly described and justified in Section (4.6). The design of the questionnaire with the details of response and related biasness has been discussed in section (4.7) Issues relating to data analyses are outlined in Section (4.8). The ethical considerations for collecting the data

have also been discussed in section (4.9). Finally, Section (4.10) offers a conclusion to the chapter.

4.2 RESEARCH PHILOSOPHY

Within any disciplinary area, an understanding of the philosophies underlying research is essential because it will determine the constitution of ‘valid’ research as well as which research methods are appropriate (Creswell, 2009). Guba and Lincoln (1994) describe research philosophy as a set of beliefs including the nature of reality (ontology), beliefs about how knowledge is acquired (epistemology) and the nature of how methods are used (methodology). Diversity in research methods is considered a major strength of Information Systems (IS) research (Lee 1999; Robey 1996; Sidorova et al. 2008). The diversity allows researchers to select a suitable research method. Moreover, the (IS) research is not linked to a single theoretical perspective (Orlikowski and Baroudi, 1991). It has several philosophical approaches including positivist, interpretive, and critical research (Mingers, 2001; Orlikowski and Baroudi, 1991; Mingers, 2003). Therefore, these philosophical approaches suitable for (IS) are discussed in the following subsections. The aim of this section is to examine the underlying philosophical assumptions of the present study, which served as the foundation for the research design and research methods adopted. The ontological and epistemological assumptions that underpin any research study will be examined, in brief, before presenting an overview of positivist, interpretive and critical research philosophies. Section 4.2.4 will explain and justify the reasons for selecting positivism as the epistemological stance of the present study. This section will be concluded by giving the reasons for adopting positivism as the epistemological stance of the present study.

4.2.1 Ontology vs. Epistemology

Social science research has been highly influenced by two major philosophical considerations; ontology and epistemology. Ontology is about the theory of social entities and it concerned with what exists, and how it should be investigated (Walliman, 2006). It is that branch of philosophy concerned with theories of realities (Beynon-Davies 2002, p.559). Ontology asks the questions of ‘what is?’ or ‘what can we know?’ (Bernard 2000, p.8). In contrast, epistemology is the ways of acquiring knowledge (Cohen *et al.*, 2000) or beliefs about knowledge (Orlikowski and Baroudi, 1991). According to Walliman (2006), the underlying issues of epistemology are concerns with the questions; how we know things and what we regard as acceptable knowledge. Thus, the identification of which epistemological stance is essential in any research since it will affect a research studies in

term of its research design, methodology and analysis as well as conceptualising of the research model (Myers, 1997; Bryman and Bell, 2007). Gathering valid empirical evidence through an appropriate methods and techniques to guide the research is what really matters in a research epistemological stance (Orlikowski and Baroudi, 1991; Myers, 1997).

Before moving the discussion to research design and strategy, it is important to review the essential paradigms underlying IS research. There are three underlying epistemologies that researchers can select from in order to guide a particular research. These are positivism, interpretive and critical research (Chua, 1986; Mingers, 2001; 2003; Orlikowski and Baroudi, 1991). However, statistics suggest that positivism is a most favoured underlying epistemology within (IS) research (Mingers, 2003; Orlikowski and Baroudi, 1991). Comprehending the difference between these epistemologies is essential to understand the research design, methodology and to compare and contrast the relative values of qualitative and quantitative research.

4.2.2 Positivism vs Interpretivism

The two main research orientations that have been regularly adopted to investigate social contexts and situations are positivist and interpretive (Orlikowski and Baroudi, 1991; Myers, 1997; Guba and Lincoln, 1994; Neuman, 2005). Table 4.1 contrasts these two key research philosophies and their applicability within research studies.

Positivism is an epistemological position that advocates the application of the methods of the natural sciences to the study of social reality and beyond (Bryman 2004, p. 11). Orlikowski and Baroudi (1991) defined positivist as “*studies are premised on the existence of a priori fixed relationships within phenomena which are typically investigated with structured instrumentation*”. Flexibility is the key benefit of positivist approach when developing a research instrument. A further advantage is that the survey instrument can be applied in different contexts, thereby acting as a mechanism for producing more generalisable results.

Positivism uses quantitative methods to collect data in order to generalise conclusions by process of deduction (Saunders et al., 2007, p.120). The majority of positivist studies are quantitative (Neuman 2007, p. 43). Positivist researchers seek precise quantitative measures, test causal theories with statistics and believe in the importance of replicating studies.

Table 4.1 Differences between Positivism and Interpretivism

	Positivism	Interpretivism
Ontology	Person (researcher) and reality are separate	Person (researcher) and reality are inseparable (life-world)
Epistemology	Objective reality exist beyond the human mind	Knowledge of the world is intentionally constituted through a person's lived experience
Research Object	Research object has inherent qualities that exist independently of the researcher	Research object in interpreted in light of meaning structure of person's (researcher's) lived experience
Research Method	Focus on empirical test (verification / falsification; proof/refutation)	Hermeneutic, dialectic
Theory of Truth	Correspondence theory of truth: one-to-one mapping between research statements and reality	Truth as intentional fulfilment: interpretations of research object match lived experience of object
Research Techniques	Theorem proof, laboratory experiments, field experiments, surveys, case studies, forecasting, simulation	Subjective/argumentative, reviews, grounded theory, action research, descriptive/interpretative studies, future research, roles/game playing/ simulation. Ethnography
Logic	Causes and effect derive through deductive logic	Theories derive through inductive logic
Validity	Certainty: data truly measures reality	Defensible knowledge claims
Reliability	Reliability: Research results can be reproduced	Interpretive awareness: Researchers recognize and address implications of their subjectivity

Adopted from: Weber (2004); Orlikowski and Baroudi (1991); Creswell (2009)

An alternative to positivist approaches is the qualitative interpretive approaches (Cohen, Manion and Morrison 2000, p.21). Interpretivism assumes that social scientists should grasp the subjective meaning of social action and should respect the differences between people and the objects of natural sciences (Bryman 2004, p. 13). Interpretive researchers tend to trust and favour qualitative data, which they believe can more accurately capture the fluid processes of social reality (Neuman 2007, p. 43). Researchers within this approach tend to prefer to use ethnographic methods and case studies as their main research methods (Weber 2004).

4.2.3 Critical Research

The critical research philosophy differs from the positivist and interpretive research philosophies, both of which “are content to predict or explain the status quo” (Orlikowski and Baroudi 1991, p. 19). Moreover, critical research remains underrepresented in the IS research literature (Falconer, 2008), leading some to describe it as “a missing paradigm” in IS research (Chen and Hirschheim 2004; Richardson and Robinson 2007). According to Mayers (1997), “critical researchers assume that social reality is historically constituted and that it is produced and reproduced by people. Although people can consciously act to change their social and economic circumstances, critical researchers recognize

that their ability to do so is constrained by various forms of social, cultural and political domination". Moreover, Orlikowski and Baroudi (1991) classify research as critical where a critical stance is taken toward taken-for-granted assumptions about organizations and information systems, and where the aim is to critique to status quo.

The critical epistemology was considered to be less appropriate for undertaking this research. This is because the purpose of the current research is not to focus upon the oppositions, conflicts and contradictions; instead it investigates factors that at this particular point of time are affecting the adoption of e-government services. Another reason is that the purpose of this research was to gather evidence in a quantitative manner, which critical epistemology does not facilitate.

4.2.4 Selection of Positivist as the Suitable Epistemology

Based on the previous review of the differences between research paradigms, it can be argued that the current research that examines e-government adoption within the UK can be characterised with a positivist approach, within which the researcher relies heavily on quantitative methods. Moreover, the statistics suggest that positivism is a most favoured underlying epistemology within IS research (Mingers, 2003; Orlikowski and Baroudi, 1991). The research questions underlined in the introductory chapter clearly specified that the nature of this study is positivist. More specifically, the context for the study is e-government adoption and inclusion within the UK. Technology adoption and diffusion is considered to be one of the most mature areas within IS research. To examine variety of technological objects related to adoption, many theories and models have been developed and validated. Subsequently, a variety of constructs (dependent and independent variables) suitable for diverse situations are available which can rationally be adapted to examine the the relationships among the variables in e-government adoption (i.e. factors affecting adoption and inclusion, the level of e-government adoption and inclusion). Furthermore, the study's aim and objectives also determine the development of research hypotheses. This was the basis for developing a conceptual model and formulating the research hypotheses presented in chapter three. Hence there is a clear justification that this study adopts the positivist epistemological standpoint. As mentioned earlier, the research philosophy will shape the research design for a study.

This research does not suggest that the other two epistemologies cannot be applied to this research. It is argued that for this research context, positivism is much more appropriate and feasible. Having chosen positivist research philosophy, the following subsections will present the key components of the research design.

4.3 RESEARCH DESIGN

Research design is the framework that the research fits into, depending on the theory and nature of the research problem. It reinforces all of the research activities (Walliman 2006, p.10). Bryman (2004, p. 27) indicates that research design sets a framework for the collection and analysis of data. While, Crotty (1998, p.7) defines it as the research's particular design that shapes the choice, use, and the underlying principle it provides for the choice of appropriate methods and forms wherein these methods are employed. Three main issues essential to the design of research were addressed by Creswell (2003, p. 5); Firstly what knowledge claims are being made, secondly what strategies of enquiry might be used, and lastly what methods of collecting data and analysis will be employed. Correspondingly, a well-defined research design is important in any study, to ensure that a strong focus is retained upon the research objectives, and to improve the chances of delivering valid and meaningful research findings. It is also useful to identify the purpose of the research before framing the goals and objectives of a particular research. According to Robson (2002), the purpose of research can be classified into three categories: exploratory, descriptive, and explanatory research. Table 4.2 presents the differences between the three categories.

Table 4.2 Differences between exploratory, descriptive, and explanatory research

	Exploratory research	Descriptive research	Explanatory Research (hypothesis testing)
Definition	It might involve a literature search or conducting focus group interviews. It is broad in focus and rarely provides definite answers to specific research issues.	Seeks to provide an accurate description of observations of a phenomena	Looks for explanations of the nature of certain phenomena and predicts future occurrence
Degree of Problem Definition	Key variables are not defined	Key variables are defined	Key variables and key relationships are defined
Objective	To formulate problems. To clarify concepts. To form hypotheses but not test them.	To describe characteristics of populations based on data collected from samples. To map the ground of a specific phenomenon	To generalize the results to the population from which the sample is selected
Strategy	Qualitative	Quantitative or qualitative	Quantitative

Adopted from: Saunders et al. (2007); Robson (2002); Sekaran (2003)

Sekaran (2003) argued that research design involves a series of rational decision-making choices regarding the purpose of the study (exploratory, descriptive, hypothesis testing), its location, the type of investigation, the extent of researcher interference, time horizon, and the level to which the data will be analysed. In addition, decisions have to be made regarding the sampling design,

how data is to be collected (data collection methods), how variables will be measured and analysed to test the hypotheses (data analysis).

Consistently, based on Sekaran's definition of research design, the purpose of this study is testing the hypotheses derived from the conceptual framework presented. Hypotheses testing offer an enhanced understanding of the relationships that exist among variables. Moreover, it is believed that studies employing hypotheses testing purpose usually tend to explain the nature of certain relationships, or establish the differences among groups or the independence of two factors or more in a situation.

As for the type of investigation, Structure Equation Modelling (SEM) is chosen to explain the variables associated with the research objectives and identify the important determinants of digital inclusion in the context of e-government in the UK.

According to Orlikowski and Baroudi (1991), there are five types of research design for conducting information systems research including survey method, case study, laboratory experiment, and action research. Survey method has been used in this research to collect data and symbolise values and levels of theoretical constructs including *facilitating condition, perceived risk, attitude, perceived trust, and behavioural intention*, the data gathered for this research fits in with the quantitative type rather than qualitative.

An important step in the research design is to determine and consider the temporal classification of the survey. A survey can be carried out either through a cross-sectional or longitudinal temporal classification. A longitudinal study can be carried out about people or phenomena more than one point in time in order to answer research questions (Sekaran, 2003). Moreover, it is typically used to map change in business and management research by repeatedly measuring variables over time (Bryman and Bell, 2007; Churchill, 1999). This study is a cross-sectional survey where data is collected at one point in time from samples to determine relationships between variables at the time of the study. Although the researcher acknowledges the limitations of this type of investigation, it is beyond the timeframe of this research project to make use of a longitudinal study. In light of the above, figure 4.3 illustrates details of the design used in this research.

The research is conducted in two stages; the first stage was to develop e-inclusion taxonomy. Drawing from the literature, demographical, economic, social, cultural, political, and

infrastructural dimensions have been identified as key inhibitors for e-inclusion. Notably, these themes emerged in the literature from actual citizens' behaviour in their day-to-day life situations while using e-government services. These dimensions that influence citizens e-inclusion in the public sector services are synthesised and conceptualised offering taxonomy of factors influencing e-inclusion. Since it is difficult to collect data from a large number of respondents in order to make generalisations using interviews, focus groups, or any other qualitative method, a quantitative approach was deemed appropriate due to the fact that it increases generalisability, facilitates the ability for replication, and provides statistical rigor (Dooley, 2000). Further, the conceptual taxonomy proposed within this study requires quantitative data in order to evaluate the impact of the factors on e-inclusion. Keeping these points in mind, a survey method was adopted to achieve the research aim (Creswell, 2003; Saunders et al., 2003).

The second stage was to develop a research model and set of hypotheses that will be investigated using representative sample of citizens. The research model was developed by combining The Decomposed Theory of Planned Behaviour (DTPB) with the Uses and Gratifications Theory (U&G) to examine the factors that influence e-inclusion in the use of e-government services. Figure 4.3 presents an overview of the research design for this study.

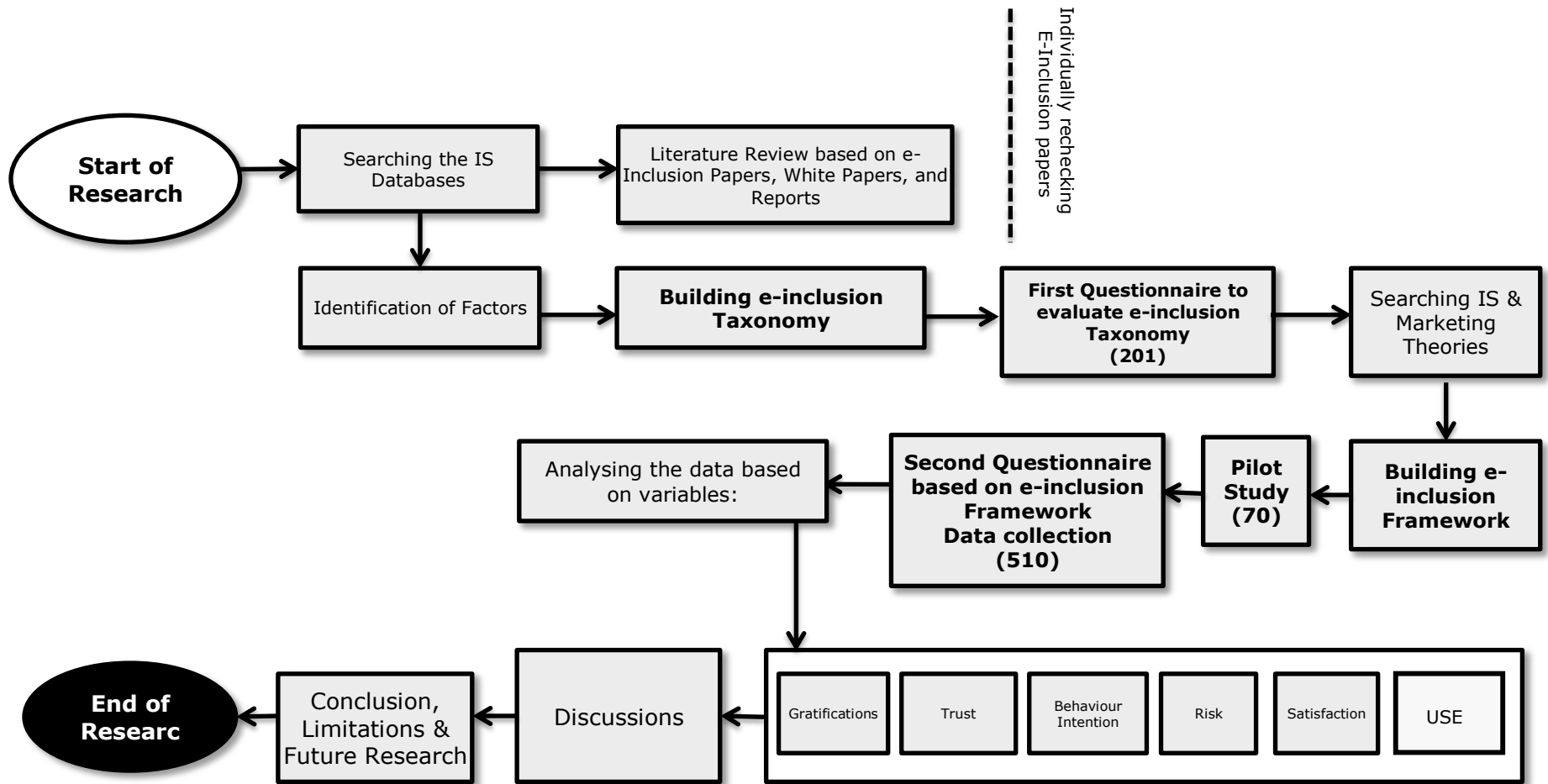


Figure 4.1 Overview of research design of the study

4.4 RESEARCH APPROACH/METHOD

Research approach or research method describes the pattern of assumptions, ideas and techniques that characterize quantitative and qualitative research (Bryman and Bell, 2007). A research normally uses one or multiple research methods such as laboratory and field experiments, surveys, case studies, forecasting, simulation, action research, and ethnographies. Moreover, there are three primary types of research methods: qualitative, quantitative and mixed methods (Bryman, 1984). Research methods are also categorised in terms of whether they presume a positivism or interpretive philosophy. Positivism philosophy uses quantitative approaches whereas interpretive uses qualitative approaches in collecting and analysing data (Beynon-Davies 2002, pp.560-563). Quantitative and qualitative research has distinctive approaches, but they also have similarities and areas of overlap, and can be brought together in various ways. Depending upon the definition of the problem and the nature of the information being sought, researchers choose one of these two approaches, or a combination of them (Punch, 2005). Each of these approaches will be briefly reviewed in the following subsections, before deciding which of these three will be adopted to conduct the research.

4.4.1 Quantitative Research

A quantitative approach is one in which the investigator primarily uses post-positivist claims for developing knowledge (i.e., cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test of theories), employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data (Creswell, 2009). It is a technique for testing objective theories through an empirical assessment that involves numerical measurement and analysis (Zikmund and Babin, 2010; Creswell, 2009; Malhotra and Birks, 2007). The researcher in quantitative research tests a theory by specifying narrow hypotheses and the collection of data to support or refute the hypotheses and generally involves a large number of respondents (Burns and Bush, 2006). Quantitative research generally is considered to be more formalised and structured than qualitative research, it can bring breadth to a study by helping researchers gather data about different aspects of a phenomenon from many participants (Venkatesh, 2013). Moreover, quantitative data are characterised to be hard, reliable, and unambiguous, depending on the accuracy of their measurement (Bryman 2004, p.287). Sources of quantitative data in the social sciences include survey methods, laboratory

experiments, formal methods (e. g. econometrics) and numerical methods such as mathematical modelling (Myers, 1997; Straub et al, 2005). Quantitative methods have typically been used more in IS for confirmatory studies, such as theory testing.

4.4.2 Qualitative Research

Alternatively, qualitative research is “a means for exploring and understanding the meaning individual or groups ascribed to a social or human problem” (Creswell, 2009). In addition, it is an approach in which the inquirer often makes knowledge claims based primarily on constructivist perspectives (i.e., the multiple meanings of individual experiences, meanings socially and historically constructed. with an intent of developing a theory or pattern) or advocacy/participatory perspectives (i.e., political, issue-oriented, collaborative. or change oriented) or both (Creswell, 2009). Strategies of inquiry used in qualitative research include narratives, phenomenologies, ethnographies, grounded theory studies, or case studies. The researcher collects open-ended, emerging data with the primary intent of developing themes from the data (Creswell, 2009). Qualitative research is often unstructured and, based on small samples, and it is primarily an exploratory type of research, which normally attempts to provide richer insight and understanding of the complexity in an issues or topic under investigation (Malhotra and Birks, 2007; Creswell, 2009). In IS and other social sciences research, qualitative methods have typically been used for exploratory research in order to develop a deep understanding of a phenomenon and/or to inductively generate new theoretical insights (Punch 2005; Walsham 2006).

4.4.3 Mixed Method Research

Mixed method approach employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problems. Often, the qualitative research serves to conceptualise the design of the quantitative research, but in some cases the process might be reversed (Burns and Bush, 2006). The latter process employed in order to help the researcher on further understands the findings in the quantitative phase (Burns and Bush, 2006). Mixed methods incorporate elements of both quantitative and qualitative approaches (Creswell, 2009) in order to gain the advantages of both (Burns and Bush, 2006). The data collection involves gathering both numeric information (e.g., on instruments) as well as text information (e.g., on interviews) so that the final database represents both quantitative and qualitative information (Creswell, 2009). In the mixed method the researcher

tends to base knowledge claims on pragmatic grounds (e.g., consequence-oriented, problem-centred, and pluralistic).

Mixed methods design strategies provide a powerful mechanism for IS researchers to deal with IS environment rapidly changes and consequently make contributions to theory and practice (Venkatesh, 2013). However, If there is no clear fit (e.g., a mixed methods approach does not serve the purpose of providing reasonable answers to a research question), it is likely that mixed methods research is not appropriate (Venkatesh, 2013).

4.4.4 Selection of Quantitative as Suitable Research Approach

A quantitative strategy was adopted in view of the positivist epistemological stance, the framework development and the hypothesis testing. The researcher develops a research model based on the Decomposed Theory of Planned Behaviour and Uses and Gratifications Theory and plans to survey citizens in the United Kingdom. A quantitative strategy was adopted for this research as its set a firm foundation in the process of data gathering, and later the analysis of the data for the study.

Since data utilised in this research were collected employing survey methods (Myers, 1997) and represent values and levels of theoretical constructs (Myers, 1997; Straub et al, 2005), the data collected in this research belongs to the quantitative category. And since the objective of a research inquiry is to test a model that was developed from a well-established theoretical perspective and the context of the research is not significantly different from the context in which the theoretical perspective was developed, there is no need to conduct mixed methods research (Venkatesh, 2013). However, if this study is going to be conducted in a rural village in development country, a mixed methods approach may unearth factors that are not typically common in a developed country in the West. Having determined the research methodology, it was then necessary to determine the types of research data that would be most appropriate for testing the hypotheses.

4.5 TYPES OF RESEARCH DATA

In any research project, the researcher must determine the types of data that are most appropriate for addressing the specified research objectives. There are mainly two types of research data available primary data and secondary data.

4.5.1 Primary Data

Primary data refers to data gathered by a researcher for a specific purpose specifically addressing the research problem at hand (Malhotra and Birks, 2007; Burns and Bush, 2006). It may be qualitative or quantitative in nature (Malhotra and Birks, 2007) and can be collected through different research methods and strategies, including surveys, focus groups, observations or experiments. Subsequently, the primary data collection strategy are tailored specifically to answer a precise research questions, this data is often used to test research hypothesis in social science research (Churchill, 1999), where surveys are commonly cited as the common method in obtaining the data (Albaum and Peterson, 1984). One of the advantages of the primary data gathering is that researcher has full control over the reliability and validity of the data (Zikmund and Babin, 2010), thus data are more accurate, which in return produces more objective results (Iacobucci and Churchill, 2010). Another advantage is that primary data has a sense of flexibility and versatility, which refers to the ability to collect specific information on the different themes and topics that are of interest of the researcher (Iacobucci and Churchill, 2010). Cost and time consuming are two of the main disadvantage of collecting primary data, especially in the collection and analysis of the data (Malhotra and Birks, 2007).

4.5.2 Secondary Data

Secondary data refers to data that have been previously gathered by someone other than the researcher, and that the data collected is to serve the purpose other than the problem at hand (Malhotra and Birks, 2007; Burns and Bush, 2007). Government data, financial databases, industry association groups, and data internal to organizations are some examples of important sources of secondary data. Secondary data have many advantages such as that it is; easily accessible, relatively inexpensive and quickly obtained. Moreover, the data is usually available and less likely to be influenced by self-report biases that may be present in the data collected through attitudinal scales. In addition, the researcher bypasses the stages of instrument creation and primary data collection and maintaining access to research setting and gathering sensitive information (Houston, 2004; Malhotra and Birks, 2007; Burns and Bush., 2006). However, the main disadvantage is data have been collected for a purpose other than the problem at hand, thus the usefulness to problem at hand may be limited in terms of its relevance and accuracy (Malhotra and Birks, 2007). Other possible disadvantages includes; incompatible reporting units, measurement units do not match with the unit needed

by researcher, out dated data, the class definitions of the reported are not usable to the current research purpose, and the data may be difficult to match to other types of data (Houston, 2004; Burns and Bush, 2006).

4.5.3 Selection of Primary Data for this study

In light of the positivist approach being adopted on this study, and the choice of the quantitative research methodology, primary data seems to be the most suitable type for collection.

4.6 SURVEY RESEARCH APPROACH

Before proceeding further into detail about various aspect of the survey, it is important to clarify the term “survey”. The survey is a “research method involving the use of standardised questionnaires or interviews to collect data about people and their preferences, thoughts, and behaviours in a systematic manner” (Bhattacharjee, 2012). It is a quantitative method that requires consistent information about the subjects under study. Survey is used to collect information from the end users as it is suitable when data is collected from significant number of people spread over a wider geographical range (Berdie et al., 1986; Denscombe, 1999). Information is commonly gathered from only a fraction of the study population, but it is collected in such a way that can generalise the findings and represent the whole population. Usually, the sample is large enough to undertake the exhaustive statistical analysis (Pinsonneault and Kraemer, 1993) Moreover, respondents are asked structured and pre-defined questions about their conduct, viewpoint, demographic, and their lifestyle characteristics. Questions might be put across verbally, in writing, or through a computer (Malhotra, 1999).

Survey research has several strengths compared to other research methods. First, surveys can measure a wide variety of unobservable data, such as people’s preferences (e.g., political orientation), traits (e.g., self-esteem), attitudes (e.g., toward immigrants), beliefs (e.g., about a new law), behaviours (e.g., smoking or drinking Behaviour), or factual information (e.g., income). Second, survey research is also suitable for remotely collecting data about a population that is too large to observe directly. Third, questionnaire surveys are preferred by some respondents because of their unobtrusive nature and the ability to respond at one’s convenience. Fourth, certain population groups such as the homeless or illegal immigrants are not reachable since there is no sampling frame available, so interviews may be the only way of reaching. Fifth, large sample surveys may allow detection of small effects even while

analysing multiple variables, and depending on the survey design, may also allow comparative analysis of population subgroups (i.e., within group and between group analysis). Sixth, survey research is economical in terms of researcher time, effort and cost than most other methods such as experimental research and case research. However, survey research also has some unique disadvantages. It is subject to a large number of biases such as non-response bias, sampling bias, social desirability bias, and recall bias (Bhattacharjee, 2012).

Sampling, data collection and instrument development are the three essential components of the survey research approach (Fowler, 2002). According to Fowler (2002) all three aforementioned components are essential to achieve a good survey design. The first component is sampling which involves the selection of a small subset of a population that is representative of the whole population. In order to get a good sample, it is important to apply a technique that gives all or nearly all the population members the same chance of being selected (Fowler, 2002). There are many techniques for collecting data such as in person, telephone, mail and the Internet. However, the selection should be made after evaluating the advantages and disadvantages from the perspective of a particular research context (Fowler, 2002). Thus, in order to evaluate the advantages and disadvantages from the perspective of this research, various aspects of sampling and data collection are discussed below. Moreover, 'instrument development' is the third component introduced in the next section (Section 4.7).

4.6.1 Justification for Survey as a Preferred Research Approach for this Study

Although a range of research approach is available to IS researchers, the survey approach has been found as the most frequently used for examining technology adoption (Irani et al., 2009; Dwivedi and Irani, 2009; Shareef et al., 2009; Dwivedi et al., 2006). Moreover, Case (2007, p. 205) indicates that surveys are "an appropriate and valid approach to research problems that require the study of large populations". The survey research can be divided into two categories based on the nature of data collection; questionnaire surveys and interview surveys. The questionnaire is an instrument that is based on writing and is completed by respondent, while an interview is conducted by the interviewer and is based on verbal responses of the respondents (Bhattacharjee, 2012). The survey strategy used to gather data for this study is a group-administrated survey, therefore, questionnaire survey was used as the research instrument for this study. For the purpose of this research, printed questionnaires were the most appropriate data collection method. Since the research discusses the factors

affecting e-inclusion, the researcher cannot exclude any group of society because of their lack of skills or lack of access. It was also decided that on site administration is the best delivery mode for the questionnaire. This approach allows the researcher to obtain information immediately (Fink, 2003) and it has also the advantage of facilitating participation by a wider range of respondents, such as those with visual disability or other difficulties (Gorard, 2003).

The choice of approach influenced by the unit of analysis. In studies related to individual users, the survey approach was favoured but when the researchers considered the organisation as a unit of analysis, the case study approach was favoured. This can be attributed to issues such as convenience, cost, time and accessibility (Gilbert, 2001). Moreover, the aim of this research was to examine the factors affecting e-inclusion in the context of e-government across the UK from citizen's perspective. Therefore, in order to get an overall picture of the research issue, collecting data from a large number of participants from across the UK is required. Thus, survey approach was selected for this study.

Selection of the approach was also influenced by the type of theory and models employed to examine e-inclusion and e-government research. Hence, the conceptual model includes a number of research hypotheses that need to be tested, collecting quantitative data and statistical analysis is required in order to test research. In order to achieve this, it was essential to collect quantitative data on a number of variables including demographics and thereafter perform a SEM to identify a relationship. This was again a logical reason for adopting the survey as a research approach and collect quantitative data that may help to understand the factors that influence e-inclusion

On the basis of the aforementioned reasoning, it was decided that the most appropriate research approach to conduct this research is the survey. The next section provides details on sampling process of the potential respondents, followed by the development of the questionnaires.

4.6.2 The Sampling Process

Sekaran (2003, p.66) define sampling as a “*process of selecting a sufficient number of elements from the population so that by studying the sample, and understanding the properties or the characteristics of the sample subjects, we will be able to generalize the properties or the characteristics of the population elements*”. Moreover, Bhattacharjee (2012) argued that it is very important to select a sample that is a right agent of the population in

such a way that the inferences derived from the sample can be generalised back to the entire population. However, it is impractical and impossible to study entire populations because of feasibility and cost constraints, and hence, selecting a representative sample from the population of interest for observation and analysis is a must (Sekaran, 2003). Even though it was possible, but it would be prohibitive in term of time, costs and other human resources (Churchill, 1999).

The sampling process consist of several stage including defining the target population, choosing a sampling frame, and selecting a sample from the sampling frame by using a well-known sampling technique. A population can be defined as all people or items (unit of analysis) with the characteristics that one wishes to study. The unit of analysis may be a person, group, organization, country, object, or any other entity that you wish to draw scientific inferences about (Bhattacharjee, 2012).

The current research will use citizens as its unit of analysis. This is done because the research is all about examining the factors influencing citizens' e-inclusion by examining their adoption and use of e-government services in the context of the UK. Therefore, as per definition, the population for this research will constitute all of the people of the country at large.

4.6.2.1 Sampling Frame

A sampling frame is list of all units in the population from which an actual sample can be drawn (Churchill, 1999; Bryman and Bell, 2007). In context of the present research, the sampling frame will constitute the citizens from the UK (south, west, north, and east) representing an overall sample of the population. To institute the sample frame of citizens, a list of respondents was selected from all different backgrounds including students, housewives, employees, unemployed individuals, pensioners.

4.6.2.2 Sampling Technique

After determining the sample frame, the next step was to decide upon a selection technique for respondents to be included in the final study. Fowler (2002) suggests a number of techniques that can be employed for selecting respondents from a sample frame. Amongst them the probability sampling technique includes simple random, systematic and stratified sampling. Probability sampling is a technique where every unit of a population has the probability (non-zero probability) of getting selected in the sample, and this possibility can be correctly determined. All probability sampling have two common characteristics: (a) every

unit of analysis in the population has a known non-zero probability of getting sampled, and (b) the sampling process occupies random selection at some point of time (Bhattacharjee, 2012). Non-probability sampling is a sampling technique in which some units of the population have a zero likelihood of selection or where the probability of selection cannot be accurately measured. Usually, the units of analysis for this sampling technique are selected based on solid non-random criteria, including quota or convenience. If the selection will be in non-random bias, non-probability sampling does not allow the assessment of sampling errors, and a sampling bias may be caused. The types of non-probability sampling techniques include convenience sampling, quota sampling, expert sampling, and snowball sampling (Bhattacharjee, 2012).

This research has not employed the probability sampling technique for collecting data. This is due to the reason that every unit (i.e. citizens) of the population is not guaranteed to be selected in the sample. Indeed, this research does not ensure that every citizens of a sample frame is necessarily being considered as a part of the sample, because it is a voluntary survey where only the interested respondents were invited to take part. Moreover, as this study focusing on the e-inclusion in the UK and the access gap does not excess anymore in the UK the survey has been designed to consider the responses of only the Internet adopters and potential adopters of the e-government services. Therefore, probability sampling is not suitable for this research for the aforementioned reasons. This research has used the convenience sampling as its sampling technique. Convenience sampling is a technique in which a sample is drawn from that part of the population that is close to hand, readily available, obtainable, or suitable to the researcher to conduct (Bhattacharjee, 2012). The following section will provide the reasons for selection of the convenience non-probability sampling for this research.

The researchers handed out the questionnaire physically to the participants in different locations - concentrated community markets, community schools, public library, cafes, universities, and public transportation (trains) - and collected the completed questionnaires subsequently. This resulted in a well distributed sample in terms of demographic information. Moreover, this enabled the researchers to clarify any ambiguity to participants enabling them to understand the importance of the research, which, according to Heje et al. (2006), can encourage a higher response rate.

4.6.2.3 Sample Size

Sample size is the most commonly encountered issue in a survey research where researchers look for a basis to determine the sample size. Researchers have suggested various approaches to determine the sample size. According to Muthen et al. (2002) a sample size required for a study depends on many factors including the size of the model, distribution of the variables, amount of missing data, reliability of the variables, and the strength of the relationships between the variables. While Israel (1992) stated that there are various approaches for determining the sample size of a research including using census for small populations, imitating a sample size of similar studies, recommended sample size based on published tables, and using formulae to compute a sample size. Malhotra (1999) argued that the required sample depends on the factors such as data analysis techniques and access of the sampling frame. However, Fowler (2002) suggested that there is not specific appropriate way to determine the sample size and the data analysis plan is the prerequisite for determining a sample size. Moreover, Muthen et al. (2002) argued that no specific guidelines applied to all situations when deciding the sample size.

The proposed data analysis for this research would be structural equation modeling (SEM), which is assumed to be less stable when estimated from small samples (Tabachnic and Fidell, 2001). As the number of sample increases, the reliability of the obtained correlations goes up. According to Tabachnic and Fidell, (2001); Comrey and Lee (1992) the adequacy of sample size might be evaluated very roughly on the following scale: 100- poor; 200- fair; 300- good; 500- very good; and 1000 or more- excellent.

Deriving from aforementioned arguments, the review of literature on citizen's adoption of the e-government using SEM (Schaupp and Carter, 2010; Schaupp et al., 2010; Horst et al., 2007; Hung et al., 2009) the collected sample of sizes of 510 seem to be feasible for further statistical analysis.

4.6.3 Selection and Justification for Questionnaire as Data Collection Tool

The selection of a data collection method is a matter of complex decisions as it is based on a number of factors such as sampling, question form, question content, response rate, costs, existing facilities, and time duration of data collection. Moreover, these factors are unique to the context of a particular study (Fowler, 2002). Questionnaire was chosen as suitable data collection tool for this study. The questionnaire is a research method including a set of questions proposed to gather responses from the recipients in a standard manner. Questions

might be structured in which the recipient is asked to select an option from a given set of choices or unstructured in which respondent is required to answer in his own way. The questions for the current study belong to structured category. This study would use structured questions for obtaining data from the respondents.

On the other hand, there are different types of questionnaire surveys including self-administrated surveys, group-administrated surveys, and web-based surveys. Although self-administrated questionnaire is more costly than mail and web-based surveys, and in some cases may be almost as costly as interview, combination of self-administrated and group-administrated surveys was found deemed to be significant for this research. The context of the research was the main reason for choosing this method of data collection. In e-inclusion research, people from different demographic should be included in the study and to ensure that, combination of self-administrated and group-administrated surveys was adopted as the data collection method. In a self-administrated questionnaire, respondents completed the questionnaire without any interference from researchers gathering the data (Wolf, 2011). The self-administrated questionnaire has been distributed in person to large groups of people. The decision to distribute this self-administrated questionnaire to a large group is also stimulated from the fact of saving the researcher's time. Many researchers stated that substantial cost savings can be made when self-administered questionnaire are given to larger groups of people and this is where the idea for using group-administrated questionnaire came from (Bhattacharjee, 2012; De Leeuw et. al., 2008). Moreover, high response rate and the convenience were other reasons that make it a very efficient way of data collection. Beside the reasons of efficiency or costs, group-administrated survey are also used when special groups are surveyed, who may need extra attention and time such as elderly people and/or when the design asks for a self-administrated approach.

In mail surveys, the same questionnaire is sent to a large group of people who are ready to answer the questions and return it back in an envelope. Nevertheless, one of the major disadvantages of this survey is that its response rate is considerably less due to the fact that a majority of people are not interested in filling in the questionnaire especially if it was a long questionnaire which is the case of this study. In a web-based survey, respondents are requested to provide their feedback through interactive web-based questions with a link to an online website where it can be completed. Such surveys are economical and outcomes are instantly recorded in the database (Bhattacharjee, 2012).

In regards sampling, the selection of the data collection method should be based on trustworthiness and completeness of information that a sample frame provides Fowler (2002). The sample frame for this study consists mainly of students, parents in community schools, school staff, pensioners and the unemployed in selected cities of the country; therefore a group-administrated questionnaire was found deemed to be significant for this research

People were asked to fill in printed questionnaire on the spot, for example parents who are dropping their children to school were given the questionnaire and asked to return it at the pickup time. Or parents who are waiting to pick up their children from school where asked to fill the questionnaire during their waiting. A number of questionnaires were given to the school reception after sending a written request to the school head teacher taking the permission from the head teacher to participate in the study. The schools were helpful and the questionnaire was distributed to the school staff, teachers, teaching assistants, dinner ladies and administrators and collected after one week. Many data collection methods were used to ensure that people from different demographics were included in the study. Using personal approach in combination with social exchange principles enhance the response rate (Dillman et al., 1995), and the question-answer process remains completely self-administrated.

There are two main disadvantages for this method of data collection. Firstly, the level of refusals can occur, especially if the questionnaire is long can be high. This can be avoided by choosing the suitable time that sample members have available and the circumstances. Targeting people while they are waiting in a queue was a successful technique to get rather low levels of refusal as the sample members do not have many alternatives ways to spend the time. Secondly, respondents may feel intimidated, and provide socially desirable answers to the survey questions during group-administrated process. Respondents should feel that their confidentiality is protected.

The group-administration of self-administrated questionnaire is a special case that needs to be planned well. Self-administrated questionnaire are then administrated to the group, interviewers are used as intermediaries to sample and select respondents, explain the purpose of the questionnaire, and to motivate respondents and increase response quality, even though the data collection is totally self-administrated. The researcher should prepare an introduction of the survey to introduce the questionnaire for the respondents. This introduction mainly contains the same topics that a good cover letter does including an explanation about who is doing the survey and the aim of the survey.

The literature of the research on e-government adoption supported a questionnaire survey as the suggested and preferred data collection method (e.g. Shareef et al., 2011; Abu-Shanab et al., 2010; Ojha et al., 2009; Carter and Weerakkody, 2009; Mitra and Gupta, 2008; Sahu and Gupta, 2007; Hung et al., 2006; Chu et al. 2004).

The respondents were asked to complete the questionnaire on the spot in different locations such as; concentrated community markets, community schools, public library, cafes, universities, and public transportation (trains).

Introducing e-government services used for this research: since the aim of this research is not evaluating or comparing the e-government services provided by the UK government but examining the factors that most influence the citizens' e-inclusion, this research has not specify specific e-government services for testing the developed model. However, examples of various e-government services were introduced at the beginning of the questionnaire for the sake of understanding the context of this research.

4.7 SURVEY INSTRUMENT DEVELOPMENT AND VALIDATION

4.7.1 Survey Measures

The measures employed in this study were drawn from the literature and adopted to fit the context of the study. Items for predictor gratifications were adopted from Stafford and Stafford, 2001, 2004), technology acceptance items from Davis et al. (1989), trust items from (Carter and Belanger, 2005; McKnight et al., 2002; Carter and Weerakkody, 2008), risk items from (Hsu and Chiu, 2007; Davis, 1989), satisfaction items from (Chen and Wells, 1999, 2001; Huang, 2008; Hsu and Chiu, 2007; Oliver, 1980) , and use items from Venkatesh et al. (2008).

A total of 95 questions were generated from a list of 24 distinct constructs (e.g. accessibility, capacity, perceived ease of use, perceive usefulness, subjective norms etc.). As already discussed, the current research has not identified specific e-government services for developing the questionnaire survey. Table 4.3 presents list of items for the constructs used with a reference of source(s) from where these items have originally been selected.

Table 4.3 List of items for the constructs used for this study

Construct	Code	Measure	Reference
Perceived Ease of Use	PEOU1	Online government service are (would be) easy to use.	Davis (1989)
	PEOU2	Learning to use online government services is (would be) easy for me.	
	PEOU3	I would find it easy to use online government services to do what I want to do.	
	PEOU4	It would be easy for me to become skilful at using online government services.	
Perceived Usefulness	PU1	I would find online government services useful for me.	Davis (1989)
	PU2	Using online government services (would) make me more efficient.	
	PU3	Using online government services (would) make my life easier.	
Compatibility	C1	Using online government services will fit well with the way I work.	Taylor and Todd (1995), Carter and Bélanger (2005), Chen and Thurmaier (2005),
	C2	Using online government services would fit into my lifestyle.	
	C3	The setup of the online government services will be compatible with the way I work.	
	C4	I like virtual interaction with online government website better than personal interaction with physical offices.	
Relative Advantage	RA1	Using the online government services would save time and it is important to me.	Rogers (1983)
	RA2	Using the online government services has more advantages and it is important to me.	
Accessibility	Ac1	I have access to hardware (e.g. computer, smart phone) needed to use online government services.	Bandura (1986); Ajzen (1991); Taylor and Todd (1995); Bhattacharjee (2000)
	Ac2	I have access to software needed to use online government services.	
	Ac3	I have access to Internet service needed to use online government services.	
Affordability	Af1	I have the resources, knowledge and ability to buy a computer/smart phone.	Murru (2003), Shareef et al. (2011)
	Af2	I have the resources, knowledge and ability to pay for Internet connection.	
	Af3	I would be able to pay for online government services.	
Capacity	C1	I would feel comfortable using online government services on my own.	Wang (2002), AGIMO (2003), Tung and Rieck (2005), Anthopoulos et al. (2007), Kumar et al. (2007), Shareef et al. (2011)
	C2	I would be able to use online government services reasonably well on my own.	
	C3	I have the skills needed for using online government websites.	
	C4	I have qualifications to use and operate a computer and Internet.	
	C5	I am confident of using online government websites.	
Availability	AV1	I was constrained by the lack of resources needed to use online government services.	Murru (2003), Shareef et al. (2011)
	AV2	Resources required to use online government services were available to me.	
	AV3	I have adequate computer technology at home/ workplace/institution.	
	AV4	I always have access to a high-speed internet connection at home/workplace.	
Interpersonal Influence	II1	My peers/colleagues/friends thought I should use online government services.	Taylor and Todd (1995)
	II2	People I knew thought that using online government service is/was a good idea.	
	II3	People I knew influenced me to try out online government services.	
	EI1	I read/saw news reports that using online government services is a good way to interact with the government.	

External Influence	EI2	The popular press depicted a positive sentiment for using online government services.	Karahanna et al. (1999), Lynne et al. (1995), Hsu and Chiu (2007)	
	EI3	Mass media reports convinced me to use online government services.		
	EI4	Expert opinions depicted a positive sentiment for using the online government services.		
	EI5	The government expects me to use online government services.		
	EI6	The government thinks that I should use online government services.		
	Process Gratifications	PG1		Resources (online services and utilities that you use)
PG2		Search Engines		
PG3		Searching (looking for specific information)	U&G	
PG4		Surfing (browsing the web, not necessarily with a specific goal)		
PG5		Technology (information technology; computer system that you access, learn about, or use when online)		
PG6		Website		
Content Gratifications	CG1	Education	Stafford and Stafford, (2001, 2004), Chang and Zhu (2011)	
	CG2	Information <ul style="list-style-type: none"> • Learn about unknown things • Search for information you need • Keep up to date on current trends • Get useful information 		
	CG3	Knowledge		
	CG4	Learning		
	CG5	Research		
Social Gratifications	SG1	Chatting (live interaction)	Stafford and Stafford, (2001, 2004) U&G	
	SG2	Interaction (communication with people)		
	SG3	People (social interaction, in general)		
Attitude	A1	Using online government services would be a good idea.	Taylor and Todd (1995), Hung et al. (2006)	
	A2	I like the idea of using online government services for forms-filling action.		
	A3	I like the idea of using online government services for transactional services (secure online payment).		
	A4	Using online government services would be a pleasant experience.		
Perceived Behaviour Control	PBC1	I would be able to use online government services well.	Taylor and Todd (1995), Shih and Fang (2004)	
	PBC2	Using online government services was entirely within my control.		
	PBC3	I have the resources necessary to use online government services.		DTPB
	PBC4	I have the knowledge and ability to use online government services.		
Subjective Norm	SN1	People (peers and experts) important to me support my use of online government services.	Taylor and Todd (1995)	
	SN2	People who influenced my behaviour want me to use online government services instead of any alternative means.		DTPB
	SN3	People whose opinions I valued prefer that I use online government services.		
Behavioural Intention	BI1	I intend to use online government services within the next 3 months.	Taylor and Todd (1995), DeMaagd et al. (2013)	
	BI2	It is likely that I will use online government services.		
	BI3	I expect to use online government services.		

	BI4	I will regularly use online government services in the future.	
Use	Use1	On average, how many hours do you spend per week using the Internet?	Venkatesh et al. (2008), Igbaria et al. (1997), Al-gahtani et al. (2007)
	Use2	How often do you use the Internet?	
	Use3	How do you consider the extent of your current Internet use?	
Internet Satisfaction	IS1	I feel satisfied with the ease of use of the Internet/web.	Chen and Wells (1999), Huang (2008)
	IS2	I am satisfied with information on the Internet/web.	
	IS3	I am satisfied with online products and services.	
	IS4	I am satisfied with the prices on the Internet/web.	
	IS5	Overall, I am satisfied with the Internet/web.	
	IS6	Assuming that I have access to the Internet, I intend to reuse it.	
	IS7	I will reuse the Internet in the future.	
Government Satisfaction	GS1	I am satisfied with the performance of e-Government service	Oliver (1980)
	GS2	I am pleased with the experience of using the e-Government service.	
	GS3	My decision to use the e-Government service was a wise one.	
	GS4	My feeling with using the e-Government service was better than traditional way.	
Trust Government	TG1	I think I can trust online government websites.	Carter and Bélanger (2005)
	TG2	The online government websites can be trusted to carry out online transactions faithfully.	
	TG3	In my opinion, online government websites is trustworthy.	
	TG4	I trust online government websites to keep my best interests in mind.	
Trust Internet	TI1	The internet has enough safeguards to make me feel comfortable using it to interact with online government websites.	Carter and Bélanger (2005)
	TI2	I feel assured that legal and technological structures adequately protect me from problems on the Internet.	
	TI3	In general, the internet is now a robust and safe environment in which to transact with e-government websites.	
Perceived Trust	PR1	The government takes full responsibility for any type of insecurity during interaction/transaction at the e-government website.	Loiacono et al. (2002), Balasubramanian et al. (2003), Wangpipatwong et al. (2005), Collier and Bienstock (2006), Fassnacht and Koese (2006), Kumar et al. (2007), Shareef et al. (2009), Shareef et al. (2011)
	PR2	The e-government website is, overall, reliable.	
	PR3	What I do through the e- government website is guaranteed.	
	PR4	The e-government website is more reliable than physical government offices.	
	PR5	Legal and technological policies of online government adequately protect me from problems on the Internet.	
Perceived Risk	PR1	There is possibility of online government services malfunctioning and not performing as it was designed and therefore failing to deliver the desired benefits.	Hsu and Chiu (2007), Davis (1989)
	PR2	There might be potential monetary outlay associated with using online government services.	
	PR3	There is/was a possibility of losing time when using online government services to make an unsuccessful process for instance; form filling process or paying for any service.	

4.7.2 Questionnaire Development

A survey instrument has been used in this research to get a response about the citizen's perception on their adoption intention for e-government services and their level of digital inclusion. The questionnaire has been developed using the items of those constructs which have been performed significantly and quite regularly across the empirical studies of e-government adoption in addition to constructs that have been used significantly in marketing research to determine the people gratifications. The questionnaire consists of 95 such questions derived from 23 distinct and significant constructs of e-government adoption research in addition to Internet adoption research, marketing research, and e-inclusion research. Moreover, the questionnaire includes ten questions on the respondent's demography. The relevant questions have been picked from the original sources of literature as far as possible. The nature, purpose and objective of the questionnaire were conveyed through its cover page.

Respondents were asked to go for the most appropriate option as per what they identify the best response for the questions. They were also ensured about the anonymity of their personal identification and advised not to reveal any of their personal information on the questionnaire. A seven-point scale was chosen as the key instrument in the questionnaire in addition to five-point scale for gratifications construct (the purpose for using the Internet). The entire questions were close-ended to make sure that the respondents do not face any difficulty while responding to the questions. This arrangement was made looking at the different backgrounds of the respondents and their incapability to put across their own opinion on this new subject is to a certain extent.

4.7.3 Questionnaire Design

Questionnaire design phase includes determining the suitable measurement scales, the way questions are framed and their element, layout of responses, and lastly the sequence of questions.

4.7.3.1 Response Format

According to (Bhattacharjee, 2012), survey questions are either structured or unstructured. Responses to structured questions are captured using one of the following response formats; [A] Dichotomous responses are selected from one of two response options (Bhattacharjee, 2012), such as true/false, yes/no, or agree/disagree. For example, questions like gender with

only two options of male/female and whether you have completed government transaction over the Internet with response of yes/no are dichotomous questions. [B] Nominal responses are presented with more than two unordered choices (Bhattacharjee, 2012). For example, question like ‘What is your primary computing platform?’ will come under nominal response with a set of unordered options such as PC, smart phone, digital TV. Likewise, questions such as ‘what are the main factors motivates you to interact with government services online?’ - With response options of self-satisfaction, personal interest, social factors, job opportunities, time saving, and money saving. [C] Ordinal responses are presented with more than two ordered options (Bhattacharjee, 2012). For example, a question such as ‘What is your education background?’ with response options such as primary, secondary, undergraduate, postgraduate, other. Also, question such as ‘How often do you use the Internet for social networking, email, or any other online communication?’ with response options including every day, several times a week, several times a month, less than once a month, and never, can come under ordinal responses. [D] Interval-level responses are presented with a five-point or seven-point scale, semantic differential, or the Guttman scale (Bhattacharjee, 2012). This research has opted for the Seven-point Likert scale in almost all the questions to enhance the reliability of the rating and to capture the best suited option by the respondents. However, Five-point Likert scale have been used for the question ‘How often do you use the Internet for the following purposes?’ with response options; never, rarely, sometimes, daily, and several times per day. According to (Bhattacharjee, 2012), survey questions are either structured or unstructured. Responses to structured questions are captured using one of the following response formats:

- *Dichotomous response*, where respondents are asked to select one of two possible options, such as true/false, yes/no, or agree/disagree. An example of such a question is: Have you ever completed a government transaction over the Internet? (Circle one):
yes / no
- *Nominal response*, where respondents are presented with more than two un-ordered choices, such as: What is your primary computing platform: PC/ Smart phone/ Digital TV
- *Ordinal response*, where respondents have more than two ordered options, such as: what is educational background: Primary /Secondary / Undergraduate/ Postgraduate
- *Interval-level response*, where respondents are presented with a 5-point or 7-point Likert scale, such as: I am satisfied with the performance of e-government services: ranging from one (strongly disagree) to seven (strongly agree) and four (Neutral).

- *Continuous response*, where respondents enter a continuous (ratio-scaled) value with a meaningful zero point, such as age. These responses have not been used in this questionnaire.

4.7.3.2 Question Content and Wording

There are several rules for creating good survey questions to avoid meaningless responses with very little value that caused by poorly framed or ambiguous questions Dillman (1978). With regard to the question content and wording for this research, every single question have been designed carefully to be clear, understandable, and straightforward avoiding any ambiguity. In addition, all questions in the questionnaire have been worded in a similar manner to make it easy for respondents to read and understand them (Bhattacharjee, 2012; Kassim, 2001). The wording of the questions taken from the original sources has been kept as per the context and situation of the research. Bhattacharjee (2012) argued that “every single question of the questionnaire survey should be cautiously analysed for the issue including; clarity, negative manner, ambiguous, biased, double-barreled, too detailed, presumptuous, imaginary, do the respondents have enough information. The questions need to be reworded if the answer to the first question ‘No’ and for any of the remaining questions is ‘Yes’, as such question should be avoided and not included in the questionnaire in the same form”. This research has tried to develop an ideal questionnaire by avoiding all the points highlighted above.

The questionnaire has been divided into seven sections starting with the demographic section, section two to assess the participant opinion of online government services, followed by section three which seeks to assess external and internal influence, then section four to assess Internet use, followed by section five which assess satisfaction with Internet and online government services, section (6a) assess the aspects that motivate participant to use Internet and online government services. Section (6b) assess the purposes of Internet use, finally the last section seeks to assess issues related to trust and risk of Internet/online government services.

4.7.3.3 Exploratory (Pre-Test) Questionnaire: A step toward Revision

Although there are a lot of reports and white papers discussed e-inclusion, researchers have recently begun studying it. E-inclusion is an emerging phenomenon and researchers need to employ exploratory studies to unearth factors related to it (Venkatesh 2013). The main aim behind pre-testing the questionnaire is to make sure that the questions draw out the intended

response and expose the unclear wording or errors before the survey is revealed to larger audience (Burns and Bush, 2002; Zikmund, 2000). Collis and Hussey (2003) suggest that questionnaires should be pre-tested with colleagues and with those who are part of the target population. Colleagues, who may know little about the subject, can often spot glaring errors. Those who are part of the target population can also help in improving the clarity of instructions; identifying unclear or ambiguous questions or questions that respondents may feel uneasy about answering; commenting on unclear and unattractive layouts; and adding any other comments (Saunders et al., 2007).

The exploratory survey was performed on a small group of twenty research scholars, twenty citizens who are part of the target population, and five teaching staff of Brunel University, UK, thereby matching the target population of the main study. They were asked to comment on the content and quality of the questions and also to make sure that questions are not repeated in any circumstances. They were also asked to express any difficulties with wording, problems with leading questions and biasness (Zikmund, 2000). The author made certain changes in the questions as per the suggestions from the experts.

Moreover, as the questionnaire is structured only for the Internet users, e-government services adopters and potential e-government adopters, they have been designed in such a way that reflects the respondent's future intention to adopt online government services. All the suggestions for the improvement to the quality of the questions were considered positively and the changes were incorporated successfully to give the questionnaire a final shape.

Although there are a lot of reports and white papers discussed E-inclusion, researchers have recently begun studying it. E-inclusion is an emerging phenomenon and researchers need to employ exploratory studies to unearth factors related to it (Venkatesh 2013).

Taxonomy was used to identify and classify the factors related to e-inclusion. This is followed by an exploratory study which was necessary at that stage because extant theoretical models did not provide adequate insights on e-inclusion. Based on the result of the exploratory study, conceptual model were conducted followed by confirmatory quantitative analysis to test the theoretical models of e-inclusion.

Researcher first conducted an exploratory study to unearth the factors that individuals consider when making a decision (about e-inclusion or e-government adoption) to be digitally included or not. A quantitative method (questionnaire) was used for the exploratory study.

Subsequently these factors were included in building the research model of e-inclusion and then the model was tested using a confirmatory quantitative study, or the researcher subsequently included these factors in the research model of e-inclusion and tested the model using a confirmatory quantitative study.

4.7.3.4 Pilot Testing

Pilot testing is extremely important part of the research process because it helps detect potential problems in your research design and/or instrumentation (e.g., whether the questions asked is intelligible to the targeted sample), and to ensure that the measurement instruments used in the study are reliable and valid measures of the constructs of interest Bhattacharjee (2012). The pilot sample is usually a small subset of the target population. After a successful pilot testing, the researcher may then continue with data collection using the sampled population. The data collected may be quantitative or qualitative, depending on the research method employed.

It is recommended to test and pilot the questionnaire as fully as possible to ensure that the questions operate well and the research instrument as a whole functions well before distributing it (Bryman and Bell 2003; Collis and Hussey 2003). Prior to the actual data collection, a pilot study was conducted between 13th January, 2013 and 30th January, 2013. This pilot study aimed both to evaluate the level of content validity and to ensure that the instructions, questions and scale items were clear. Seventy copies of the questionnaire were distributed through personal contacts on a convenience sample. Fifty six valid responses were acquired with response rate of 80%. To test the reliability of the items measuring the same construct, Cronbach's α was calculated for these items. After collecting the questionnaires, suggestions for possible improvements and appropriate modifications were discussed with respondents.

According to Gliem and Gliem (2003), a factor loading between seventy to eighty percent, points to a good internal consistency, whereas a loading above eighty percent indicates an excellent internal consistency. The α tests revealed that all constructs except for one had α values above seventy percent, revealing that all constructs had good internal consistency. The instrument was refined to increase the α values, after which nine items were removed from the instrument, leaving 63 items. Factorial validity could not be assessed at this stage because of the sample size requirements (Weston and Gore, 2006). The questionnaire was altered to eliminate any possible misunderstandings due to wording. Description of some tasks and

minor wording details in survey items have been altered according to the feedback from the subjects.

4.7.4 Questionnaire Distribution and Administration

The data for this research were collected from the UK (east, south, west, and north). The target population for data collection was citizens of the UK. Respondents of the survey represented citizens from all levels of society including students, unemployed, self-employed, elderly people and pensioners. As the questionnaire was very lengthy (it contained 133 questions spread across 11 pages), it was difficult to get the response from the respondents as expected. In some cases, respondents were asked to return the questionnaire on the spot whereas, in other cases, they were given a few days to response and return the questionnaire to a central point of collection. However, in cases where respondents were asked to return the questionnaire after certain period of time, a number of them were not returned in spite of multiple reminders. The on-the-spot group administrated survey was found to be the most successful means of collecting the questionnaire. The plan was to collect a minimum of 350 valid responses. The data was planned to be collected from the respondents across the UK. For the nationwide survey, the cities were selected from East, West, North, and South with a target of 200 responses from each part. The actual data was also collected in a similar proportion with a minimum of 200 responses from each part. Finally, it was ensured that the sampling process for this research involved a collection of an adequate number of the elements from the population. Hence, based on the data collected from a subset, an assumption of the characteristics of the overall population can be made (Churchill and Lacobucci, 2004; Sekaran, 2000; Zikmund, 2000).

4.7.5 Non- Response Bias and Response Rate

Even so survey research have many strengths and advantages, it is often tainted with systematic biases that may invalidate some of the inferences derived from such surveys (Bhattacharjee, 2012).

4.7.5.1 Non-Response Bias

Non Response refers to questionnaire that are not returned (Burns and Bush, 2006) because of the recipients refuse to participate (Zikmund and Babin, 2010); in contrast, non-response bias refers to the statistical differences between those who do respond and those who do not

(Dillman, 2007; Burns and Bush, 2006). Non-response bias can be categorised into two types; (a) non-response to individual questions, i.e. not responding to a few questions; and (b) not responding to any question or even not returning the questionnaire at all. According to Fowler (2002) the occurrence of the first types of non-responds is relatively low while the reported occurrence of the second types of non-response is relatively more common. There are three types of respondents for category (b) respondents (Fowler, 2002). They include: (1) respondents to whom data gathering procedures do not reach, (2) respondents who refused to fill in the questionnaire, and (3) those respondents who are not able to complete the questionnaire due to several reasons including language problem, illness, or due to lack of required writing ability to complete a self-administrated questionnaire (Fowler, 2002).

In order to minimise the non-response bias respondents were contacted individually and in a group to maximise the chance of getting the completed questionnaire through face-to-face interaction with the respondents. The responses biasness for this research seems to fall under the third type where respondents were not able to complete the questionnaire due to some personal reasons. But, reasons such as language problem and lack of required writing ability were out of question in this scenario, as the questionnaire was very clear and simple to understand and did not required writing answers for any question asked. Moreover, English was the primary language for (96.7%) of the respondents.

The implication is that there may be a difference between those who respond and those who do not, on the characteristics of the research interest (Lindner et al., 2001). However, in order to explore for non-response bias, there are systematic applications that is statistically sound and professionally accepted procedure available in handling the issue of non-response bias. A widely adapted approach called extrapolation method introduced by Armstrong and Overton (1977) is one of the ways to deal with this matter. The method involves comparing two groups of respondents. The first group categorised as early respondents and the other group as late respondents. These two groups will be compared by their responses to the Likert scale questions using *t*-test. No significant differences from the *t*-test result are desired so that generalizability can be made.

4.7.5.2 Response Rate

In order to ensure the success of data collection and the quality of the collected data, response rate must be calculated. According to Fowler (2004) the response rate is “the number of obtained responses divided by the number of sampled respondents, including all respondents in the study population who were sent the survey, but who did not respond”. The response

rate of this study calculated below followed the aforementioned definition. Of the overall 800 questionnaires distributed from Feb 2013 to April 2013, 450 questionnaires replies were received on the spot, and 120 were collected later or sent by post to the researcher. Of these, 510 questionnaires were usable and 60 were both undeliverable and incomplete questionnaires. A response rate of 63.75 percent was obtained. Consequently, 200 questionnaires were sent to randomly selected non-respondents from the original sample in mid-March 2013 to test the response bias. Of this, 40 questionnaire replies were received that included 38 usable and two partially completed questionnaires.

The pilot questionnaires were sent to an overall total of 150 respondents. A total of 115 replies were received on the spot. The total usable responses were 110 and the remaining 5 were not fully completed; therefore, they were excluded from the analysis. This led to a response rate of 76% being obtained.

As Fowler (2002) suggested that the result from the pilot-testing can be included in the final analysis if the final questionnaire is similar to the pilot test and significant changes were not made to it. Looking at this suggestion, this research has also decided not to include any of the pilot testing responses to 510 valid responses obtained for it through the main survey.

4.8 DATA ANALYSIS

Data analysis involves certain steps such as coding the responses, cleaning, screening the data, and selecting the suitable data analysis strategy (Churchil and Lacobucci, 2004; Luck and Rubin, 1997; Malhotra, 1999; Sekaran, 2000).

The analysis of collected data was conducted in different stages. Firstly, quantitative data were coded and entered into the Statistical Package for the Social Sciences (SPSS). Before starting the analysis process, data screening and cleaning was undertaken in order to check for errors (Pallant 2005, p. 40). Data screening and cleaning involved a three-step process: checking for errors where values fall outside the range of possible values for a variable; locating errors; and correcting errors by referring to the original questionnaire.

4.8.1 Coding of Response

Coding is the process of converting data into numeric setup by creating a code book to guide the coding process. According to Bhattacharjee (2012) a codebook is a comprehensive document containing full description of each variable, items or measures for that variable, the

format (e.g. numeric, text, etc.), the response scale (five-point or seven-point scale) for each item, and how to code each value into a numeric format. For instance, in a seven-point Likert scale with anchors ranging from “not at all important” to “extremely important” can be coded as 1 for not at all important, 4 for neutral, and 7 for extremely important, with the intermediate anchors in between. On the contrary, other forms of data such as interview transcripts cannot be converted into a numeric format for statistical analysis (Bhattacharjee, 2012). After successful coding of all the items, data is entered to a Statistical Package for the Social Sciences (SPSS) for further analysis.

4.8.2 Cleaning and Screening Data

Prior to analysis, research instrument items were examined, through SPSS. The process for cleaning and screening data involves discrepancy checks and missing responses (Malhotra, 1999; Luck and Rubin, 1997). Missing values on a completed questionnaire are detected and then rejected at the time of data entry in the SPSS sheet. The next step after cleaning the data is to examine the outliers to make sure that all the boxes are filled in. These may occur due to incorrect data entry, inclusion of missing values in the computation process, sampling errors where cases are non-representative of the proposed population, and inclusion of observations that are intense in the combination of values across the variables. All the above procedures of cleaning and screening the data would be taken care of to ensure the useful data set for the final analysis. Nevertheless, there was no such error of missing data or repetitive entry found in.

4.8.3 Selecting and Justifying the Data Analysis Strategy

The final step is choosing the suitable statistical analysis technique. Research problems, objectives, characteristics of the data, and the fundamental properties of the statistical techniques are elements that should take into consideration when choosing statistical analysis technique (Malhotra, 1999). This study is applying the Structural Equation Modelling (SEM) technique to validate the hypotheses and the performance of the proposed theoretical model (Hair et al., 2006). This technique is considered sufficient for the type of investigation carried out by this study since it allows for answering questions that involve multiple regression analysis of factors among a single measured dependent variable and a group of measured independent variable (Ullman, 2007). Moreover, the SEM technique allows comparing two

groups or two models which makes it an adequate tool for testing the hypotheses and achieving the objectives of the study.

A structural equation model normally consists of two types of models (Hair et al., 2006):

- The measurement model that represents the theory and which specifies how measured variables come together to represent latent factors. That is, the model implies that variants represent the factors, and
- The structural model which represents the theory specifying how constructs are related to other constructs in the model.

AMOS (Analysis of Moment Structure, version 20.0) which is an add-on module for SPSS designed predominately for SEM, path analysis, and covariance structural equation modelling was used for data analysis. SEM can also be used to perform linear regression analysis, ANOVA, and ANCOVA as well. It is a strong technique that has been used in several e-government adoption studies (e.g. Zhang et al., 2011; Lee and Rao, 2009; Mirchandani et al., 2008; Tan et al., 2008). SEM enables the researchers to determine, evaluate, measure, and present models to show the hypothesised relationships among variables.

4.9 ETHICAL CONSIDERATIONS

Ethics refers to "the appropriateness of the researcher's behaviour in relation to the rights of those who become the subject of a research project, or are affected by it" (Saunders et al., 1997, p. 109). Various ethical issues need to be considered while formulating the research plan. The Brunel University Research Ethics Committee's Code of Practice on research that involves human participation, the collection or study of their data was assessed during the research procedures (Brunel University 2006). Thus, the following was made:

- Participants were notified about the aim and objectives of the research to ensure their participation and obtain their approval.
- Participants were reassured that participation is voluntary and that they can withdraw at any time without any adverse consequence.
- Anonymity and confidentiality of data collected were strictly assured, which encourage the participants to give more open and honest responses. The questionnaire states this quite explicitly on the cover page.
- Full records of all the research procedures were maintained for the consultation of the Research Ethics Committee.

4.10 CHAPTER SUMMARY

This chapter provides an overview of research philosophy, approach, methodology, and data analysis used for online government adoption research. The chapter initially investigated the different research philosophies such as positivist, interpretive, and critical research and provides suitable reasons for adopting the positivist approach. Subsequently, the overview of the more commonly used approaches is discussed and the proper justification behind why the survey-based quantitative approach is appropriate; it is explained in detail. The author discussed survey research approach in detail in the subsequent section. Under this section, the research outlined the various aspects of sampling including probability and non-probability sampling, and discussed the sample of an appropriate size to represent the entire target group.

Furthermore, the justification and selection of non-probabilistic convenient sampling for this research was also explained. In addition, the questionnaire as a data collection tool was selected and justified. The researcher discussed the various types of questionnaire surveys including self-administrated, group-administrated, and online or web-based survey and a proper justification of group-administrated survey undertaking this research was provided. Later, the designing of the questionnaire survey and the basis on which the questions selected were discussed and the list of all the original sources as far as possible.

Under the questionnaire design, the research briefly discussed the response format, question content and wording, pre-testing and pilot testing. As far as the questionnaire distribution and administration was concerned, the research discussed the plan to collect the data by distributing questionnaire and how the response of the questionnaire was actually obtained. The research also discussed the non-response bias and response rate of the questionnaire survey. Finally, the research discussed the data analysis strategy with the coding of response, cleaning and screening of data, selecting and justifying the data analysis strategy, and ethical issues related to data collection process.

This chapter presented the research approaches and methods, as it is absolutely essential for a researcher to illustrate the stages that were used in the data analysis phase of the research.

A pencil-and-paper questionnaire comprising seven-point Likert scale was used. To ensure content validity, items were adopted from previous research. The questionnaire items were developed in many stages.

Based on previous research, the sample size exceeded 300 respondents to support a satisfactory SEM analysis. The current research sample is fairly large, with 510 responses. The data were subsequently inspected and construct validity analysed. These analysis methods measured and assessed the reliability and validity using FA, CFA, SEM and invariance analysis. The next chapter analyses the data, describes all of the tests conducted, and then presents the findings.

CHAPTER 5: RESULTS

CHAPTER FIVE: RESULTS

5.1 INTRODUCTION

The previous chapter (Chapter 4) described the development and validation of a survey instrument for the purpose of data collection in order to examine the factors influencing e-Inclusion in the context of e-government adoption and usage. Chapter 3 provided a discussion and justification of the data collection and analysis methods. This chapter aims to present findings obtained from a nationwide survey that was conducted to examine the citizens' e-Inclusion in the UK.

In order to fulfil the aim, the chapter will proceed as follows: First, the author provides the response rate and the respondents' demographic characteristics. Second, statistical analysis including Cronbach's alpha (α), mean, and standard deviation (S.D) for 25 constructs considered for e-Inclusion model. Third, adequacy and sphericity tests were performed using The Kaiser-Meyer-Olkin (KMO) to measure sampling adequacy and Bartlett's test of sphericity was conducted for the purpose of confirming the relationship between the variables. Forth, confirmatory factor analysis (CFA) was conducted to determine whether the items load satisfactorily to measure constructs. After that, the measurement model is presented after accepting the overall CFA model. Finally the structural model is presented which can conceptually represent the relationships between constructs.

The chapter is structured as follows: Section 5.2 presents a response rate of the survey. Section 5.3 describes the demographic profile of the survey respondents. This is followed by a description statistics including reliability assessment and adequacy and sphericity tests in section 5.4. The CFA and measurement model are then presented in Section 5.5. The structural equation modelling is illustrated in Section 5.6. Finally, the summary and conclusions of the chapter are provided in Section 5.7. The significance of the findings is discussed in the next chapter.

5.2 RESPONSE RATE

All the data were collected from the citizens throughout the UK between the periods of Feb 2013 to May 2013. The data collection processes and procedures have been explained in previous chapter. The breakdown of the questionnaire received is presented in Table 5.0; from the total of 800 questionnaires distributed, 570 questionnaires received for the study, which includes 60 undelivered and incomplete questionnaires. The total of usable questionnaires received was 510 and represents a rate of 63.75% which is an effective response rate within the field of IS research (Cornford and Smithson, 2006).

Table 5.0 Breakdown of the Questionnaire Received

Data Collected	Number of Questionnaires
Questionnaires distributed	800
Questionnaires received	570
Undelivered and incomplete questionnaires	60
Total usable questionnaire received	510 (63.75%)

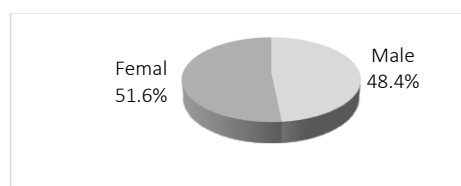
5.3 RESPONDENTS' DEMOGRAPHIC CHARACTERISTICS

A profile of the respondents' demographic characteristics is presented in this section in details since the study is about e-Inclusion and the demographics factors are important in determining the level of e-Inclusion. The demographic characteristics include the respondents' age group, gender, employment status, income, educational background, disability, living area (community types), location of Internet access, number of years of using computer, computer and Internet experience, and Internet use frequency. Of the 510 valid respondents, the demographic background is as follow:

Relating to the respondent's gender, only 3.2% more responses were obtained from females (51.6%) in comparison to male (48.4%) respondents (See Table and Figure 5.1).

Table 5.1 Gender of Respondents

Gender	Frequency	Percent
Male	247	48.4
Female	263	51.6
Total	510	100

**Figure 5.1:** Gender of Respondents

In terms of age, the results revealed that the largest percentage of respondents were in the age group of 25-34 (20.2%), followed by the age group of 35-44 and 45-54 constituting around (20%) for each group. These three age groups formed the largest response category. The age group 55-64 consisted of (16.1%) of the total respondents. The least responsive category was the 75 years and above with (1.4%) of the total respondents (See Table and Figure 5.2).

Table 5.2 Respondents' Age Group

Age Group	Frequency	Percent
18-24	11.6	11.6
25-34	20.2	20.2
35-44	20.0	20.0
45-54	20.0	20.0
55-64	16.1	16.1
65-74	10.8	10.8
75 and over	1.4	1.4
Total	100	100

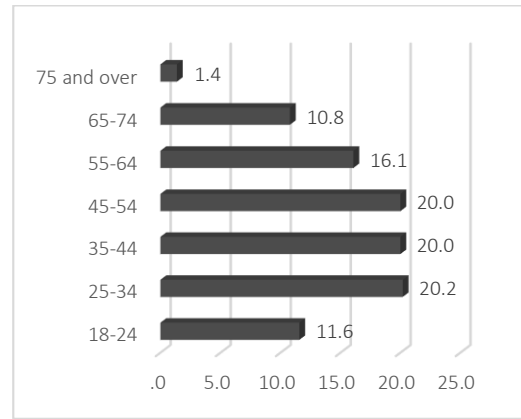


Figure 5.2 Respondents' Age Group

The employment status of the respondents belong largely to the full time employee category with (39%) followed by retired and unemployed people with almost (20%) for each. The part time employees come next with (16.9%). The least responsive category was the student category with (4.5%) of the total respondents (See Table and Figure 5.3).

Table 5.3 Respondents' Employment Status

	Frequency	Percent
Full time	199	39.0
Part time	86	16.9
Retired	104	20.4
Unemployed	98	19.2
Student	23	4.5
Total	510	100

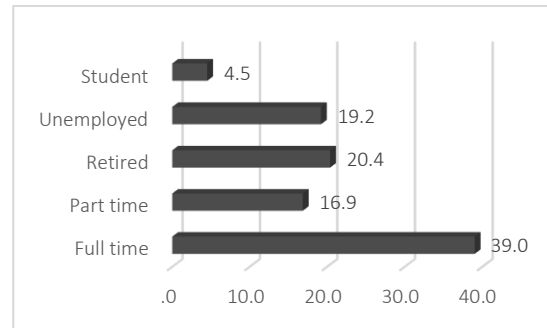


Figure 5.3 Respondents' Employment Status

The highest response rate for the income categories was 32.5% for the (£10-24 K) then 32.0% for (£25-49 K), followed by 0.4% for (£100 K and above). The least income group (less than £10 K) was represented by a 12.2% response, whilst the largest income group (£100 K and above) was represented with a 0.4% response rate (See Table and Figure 5.4).

Table 5.4 Respondents' Income

Income	Frequency	Percent
Less than £10,000	62	12.2
£10,000 - £24,999	166	32.5
£25,000 - £49,999	163	32.0
£50,000 - £86,999	51	10.0
£87,000 - £99,999	6	1.2
£100,000 and above	62	12.2
Total	510	100

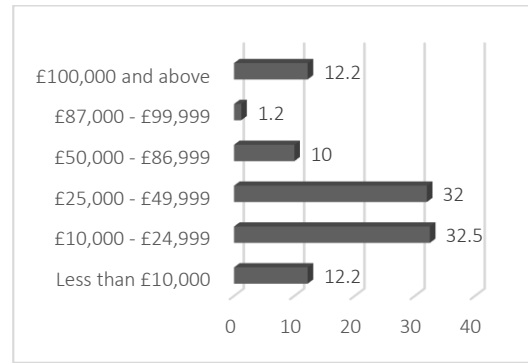


Figure 5.4 Respondents' Income

When examining the educational background of the respondents, half of the respondents 50.6% hold secondary level qualifications, 32% hold undergraduate degrees, 15.7% of the respondents were postgraduate, and 1.8% hold primary school certificate (See Table and Figure 5.5).

Table 5.5 Respondents' Education

Ethnicity	Frequency	Percent
Primary	9	1.8
Secondary	258	50.6
Undergraduate	163	32.0
Postgraduate	80	15.7
Total	510	100

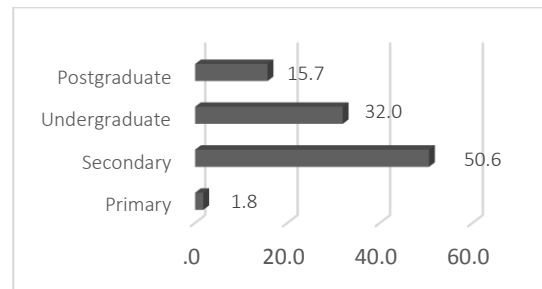


Figure 5.5 Respondents' Education

In terms of urbanization, the results revealed that 55.1% of the total respondents live in suburban area, then 28.6% live in urban area, and finally, 16.3% live in rural area (See Table and Figure 5.6).

Table 5.6 Respondents' Area

	Frequency	Percent
Urban	146	28.6
Suburban	281	55.1
Rural	83	16.3
Total	510	100

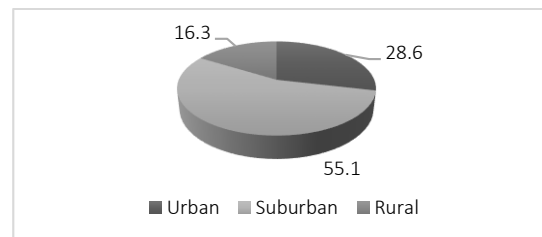


Figure 5.6 Respondents' Area

Of the 510 respondents, 358 (70.2%) were e-government users and 152 (29.8%) were Internet users but not e-government users. Of the 358 (70.2%) e-government users, 252 (70.4%) have completed a government transaction over the Internet (such as: pay parking penalty charge notice (PCN) online, pay for council tax, pay rents, pay business rates, pay social care charges, renew car tax with DVLA etc.) (See Table and Figure 5.7).

Table 5.7 Type of Users

Type of Users	Frequency	Percent
E-government Users	358	70.2
Non Users	152	29.8
Total	510	100

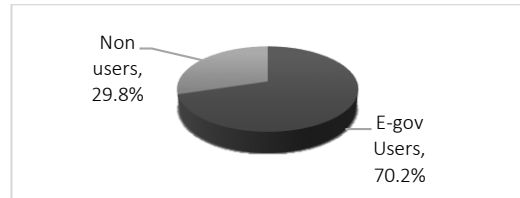


Figure 5.7 Type of Users

Of the 510 respondents, 382 (74.9%) have accessed government services online in the last 12 months (Table and Figure 5.8).

Table 5.8 Accessed e-Government

	Frequency	Percent
Yes	382	74.9
No	128	25.1
Total	510	100

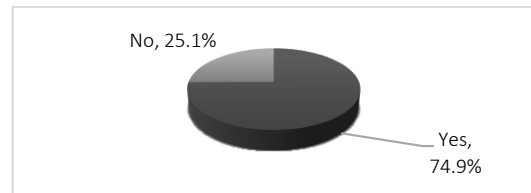


Figure 5.8 Accessed e-Government

Seven e-government services were listed at the beginning of the questionnaire to give a clear idea for the respondents about some of e-government services provided by the UK government. These services were selected carefully by the researcher. Table and Figure (5.9) present the list of the services that have been used by the 358 e-government users. Other e-government services that were accessed by 81 respondents and which are not listed in the questionnaire are presented in Table and Figure (5.10).

Table 5.9 List of e-government services used by e-government users

E-government Service	Frequency	Percent
Council Tax	170	33.3
Inland Revenue	89	17.5
Driving License	78	15.3
Register to Vote	105	20.6
Register with GP	55	10.8
Apply for School	54	10.6
Public e-Library	118	23.1
Other Services	79	15.5

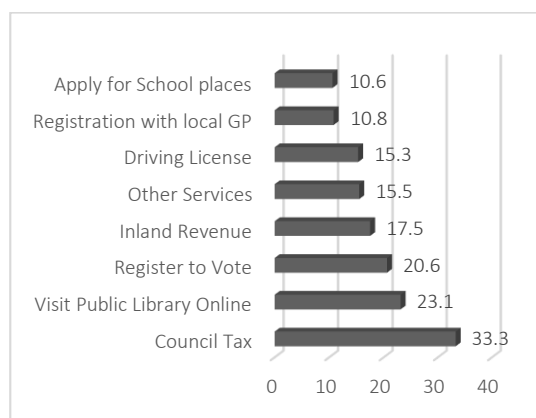


Figure 5.9 List of e-government services used by e-government users

Table 5.10 Other e-government services listed by e-government users

E-government Service	Frequency	Percent
Refuse Collection	8	9.9
Benefits Information	4	4.9
Bus Pass Highways	1	1.2
Car Tax	9	11.1
Council	3	3.7
Court Information	1	1.2
Gov.UK	2	2.5
DVLA	7	8.6
DWP	12	14.8
Employment Tribunals	1	1.2
Rent Payment	1	1.2
HMRC	7	8.6
Housing	3	3.7
Student Finance	5	6.2
Winter Fuel Payment	2	2.5
Teacher Training	1	1.2
State Pension	4	4.9
Transport Information	6	7.4
PCN	1	1.2
Registering a Death	1	1.2
Replace Birth Certificate	1	1.2
jury Services	1	1.2
Total	81	100

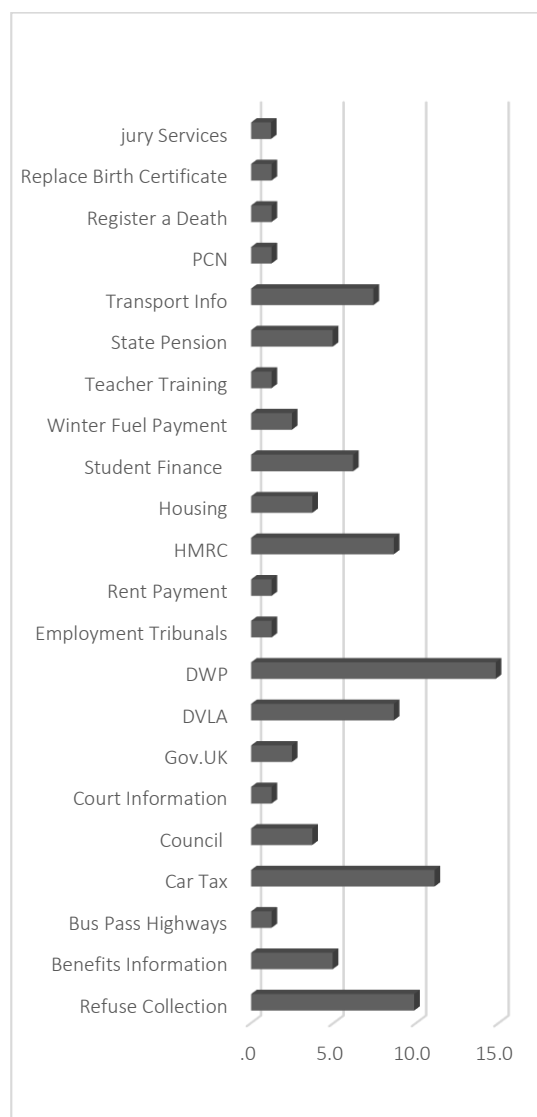


Figure 5.10 Other e-government services listed by e-government users

In term of access to the Internet from home, the majority have access at least to one computer at home 97.6% while only 2.4% do not have access to a computer at home (See Table and Figure 5.11).

Table 5.11 Number of Computers at home

	Frequency	Percent
None	12	2.4
One	177	34.7
Two	194	38.0
More than 2	127	24.9

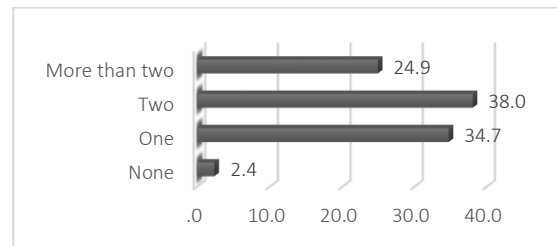


Figure 5.11 Number of Computers at home

In term of Internet experience, the result revealed that more than half of respondents 54.9% have at least 10 years of experience in using the Internet, 30.9% have 4-9 years of experience, and only 14.1% have less than 4 years of Internet experience (See Table and Figure 5.12).

Table 5.12 Respondents' Internet Experience

	Frequency	Percent
3 years or less	72	14.1
4-6 years	90	17.6
7-9 years	68	13.3
10 or more	280	54.9

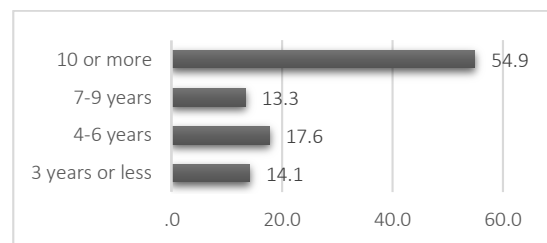


Figure 5.12 Respondents' Internet Experience

In term of the main reason that prevent people from using the Internet, privacy and security came at the top of the reasons with 47.1% of total respondents. Lack of skills came second with 24.1% followed by cost and lack of access with almost 12% for each, and finally 4.5% of the respondents stated that being not interested is the reason for not using the Internet (See Table and Figure 5.13).

Table 5.13 Main reason for not using the Internet

	Frequency	Percent
Privacy & Security	240	47.1
Not interesting	23	4.5
Lack of skills	123	24.1
Lack of access	59	11.6
Cost	65	12.7

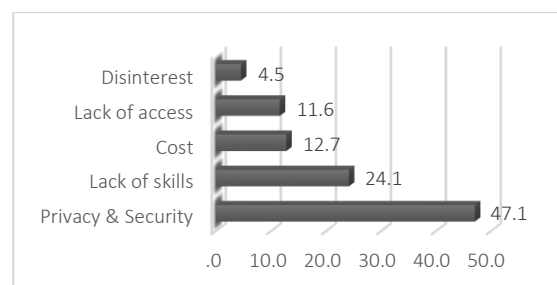


Figure 5.13 Main reason for not using the Internet

In term of the location of Internet access, Table and Figure 5.14 show that 97% of respondents access the Internet from their home. The figure also shows that people access the Internet from many other locations, such as work, Internet café, public library, college, community centre, and other locations.

Table 5.14 Internet Access Locations

	Frequency	Percent
Home	493	96.7
Work	188	36.9
Internet Café	51	10
Public Library	87	17.1
College	48	9.4
Community Centre	25	4.9
Other	22	4.3

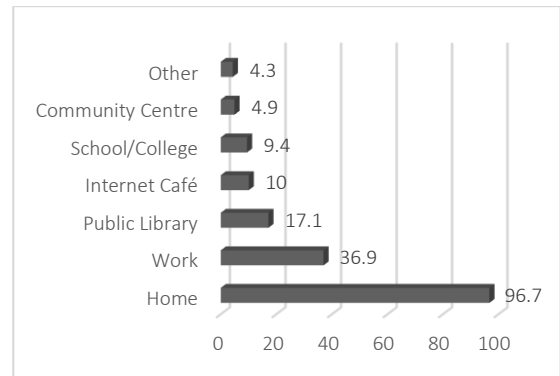


Figure 5.14 Internet Access Locations

In term of using the Internet for e-commerce, the result revealed that (96%) of the respondents have used the Internet for shopping online (See Table and Figure 5.15).

Table 5.15 Shopping Online

	Frequency	Percent
Everyday	31	6.1
Several times a week	77	15.1
several times a month	224	43.9
Less than once a month	158	31.0
Never	20	3.9

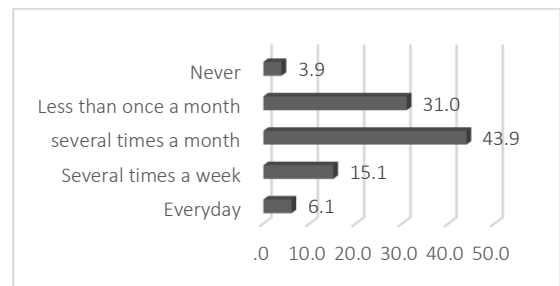


Figure 5.15 Shopping Online

In term of using the Internet for social networking, the result revealed that (94.7%) of the respondents use the Internet for social networking purpose (See Table and Figure 5.16).

Table 5.16 Social Networking

	Frequency	Percent
Everyday	334	65.5
Several times a week	96	18.8
several times a month	34	6.7
Less than once a month	19	3.7
Never	27	5.3

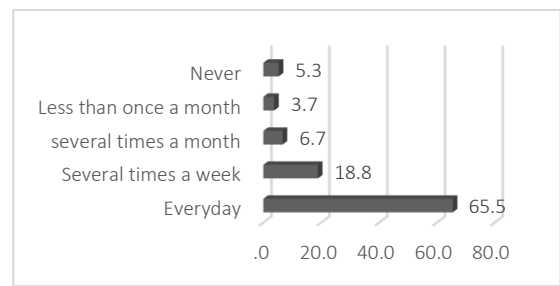


Figure 5.16 Social Networking

Of the 510 respondents, nearly all Internet users had access to the Internet at home (97%), and most of the Internet users (88.4%) had a broadband and wireless Internet connection (See Table and Figure 5.17).

Table 5.17 Type of Internet connection

Type of Users	Frequency	Percent
Broadband	286	56.1
Wireless	165	32.4
DSL	37	7.3
No Access	10	2.0
Dial up	6	1.2
Other	6	1.2

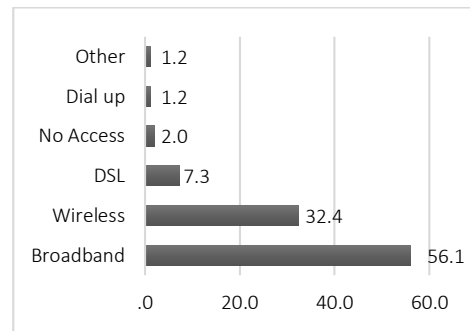


Figure 5.17 Type of Internet connection

In regards the respondents awareness of e-government services and benefits, (40%) of the respondents were familiar with both e-government services and their benefits, (28.2%) were familiar with the services but not their benefits, whereas (31.8%) were neither familiar with e-government services nor e-government benefits (See Table and Figure 5.18).

Table 5.18 E-Government Awareness

Familiar with	Frequency	Percent
Services & Benefits	204	40.0
Services Only	144	28.2
None of them	162	31.8
Total	510	100

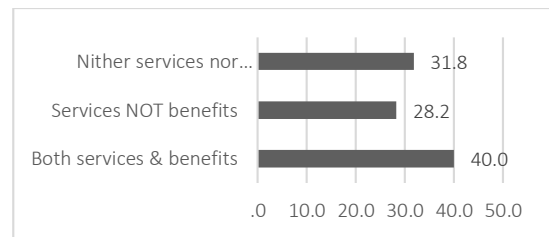


Figure 5.18 E-Government Awareness

In regard of the factors that motivate respondents to interact with e-government, (55%) of the respondents revealed that the main reason that motivate them to interact with e-government is time saving. Personal interest was the second motivation with (45.7%) followed by money saving with (40.2%). (27.5%) of the respondents reported that job opportunities was the main motivation for interacting with e-government. (18%) of the respondents interact with e-government for self-satisfaction while only (14%) interact with e-government for social factors (See Table and Figure 5.19).

Table 5.19 Factors motivate respondents to interact with e-government

Factors motivate you to use e-government	Frequency	Percent
Self-satisfaction	18	18
Personal interest	45.7	45.7
Social factors	14.1	14.1
Job opportunities	27.5	27.5
Time saving	55.9	55.9
Money saving	40.2	40.2

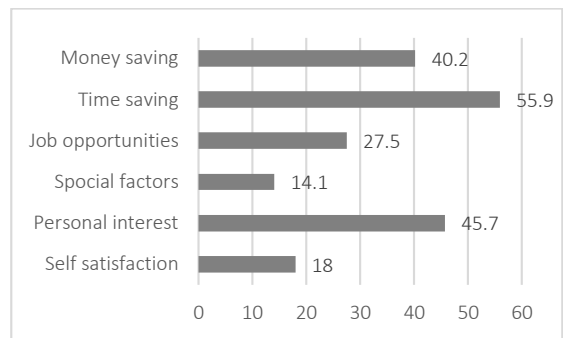


Figure 5.19 Factors motivate respondents to interact with e-government

In regard of the benefits gain from using e-government, (63%) of the respondents revealed that convenience is the main benefit they gain from using e-government followed by time saving with (60.4%). (55%) of the respondents revealed that the main benefit from using e-government is finding needed information while (32.9%) revealed that money saving is the main benefit (See Table and Figure 5.20).

Table 5.20 Benefits gain from using e-government

Factors motivate you to use e-government	Frequency	Percent
Convenience	322	63.1
Time saving	308	60.4
Money saving	168	32.9
Find needed information	281	55.1
Other	5	1

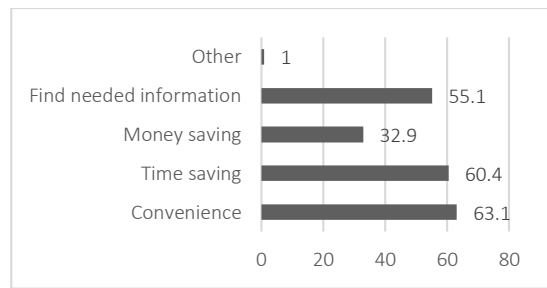


Figure 5.20 Benefits gain from using e-government

In regard to ICT and Internet use, (87%) of the respondents revealed that they use ICT and the Internet on their own. Although (8%) reported that they sometimes need assistance (3%) prefer not to ask for help. Only (2%) of the respondents reported that they need assistance when they use ICT and the Internet (See Table and Figure 5.21).

Table 5.21 Using ICT/Internet

Using ICT/Internet	Frequency	Percent
On my own	444	87.1
Need assistance	10	2.0
Sometimes need assistance	41	8.0
Prefer not to ask for assistance	15	2.9

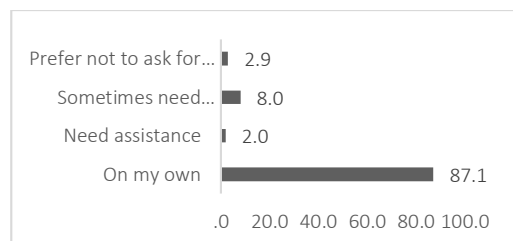


Figure 5.21 Using ICT/Internet

In regard to the Internet and computer skills, the result revealed that (49.6%) of the respondents have intermediate computer skills, (44.9%) have proficient computer skills, (5%) are beginner, and (.4%) have poor computer skills.

In regards to the Internet skills, (48.2%) of the respondents have intermediate Internet skills, (46.7%) have proficient Internet skills, (4.3%) are beginner, and (.8%) have poor Internet skills (See Table and Figure 5.22).

Table 5.22 Respondents' Internet & computer skills

	Internet skills	Computer skills
Proficient	46.7	44.9
Intermediate	48.2	49.6
Beginner	4.3	5.1
Poor	.8	.4

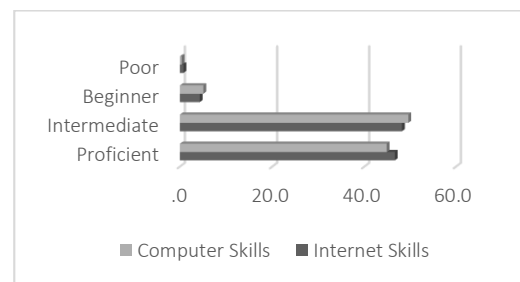


Figure 5.22 Respondents' Internet & computer skills

5.4 DESCRIPTIVE STATISTICS

Table 5.23 shows the Cronbach's alpha (α), mean, and standard deviation (S.D) for 25 constructs considered for e-Inclusion model. The number of items considered for all these constructs varies from a minimum of two to a maximum of six. Reliability and validity assessment of a research should be established to assess the consistency and accuracy of a research being carried out. Therefore, the validity measures used in this research are discussed in the section 5.4.1 and the reliability measures are discussed in the following subsections.

5.4.1 Reliability Assessment

Reliability testing and analysis is carried out to ensure both consistency and stability of a measure, which is normally, tested using the Cronbach's Alpha (α) coefficient (Sekaran, 2003). Cronbach's alpha provides an indication about the internal consistency of the items measuring the same construct (Hair et al., 1992; Zikmund, 1994). The closer Cronbach's alpha is to 1, the higher the level of internal consistency, which indicates the better the items measuring a concept fit together in a particular group (Sekaran, 2003). Hinton et al (2004) have suggested four cut-off points for reliability, which includes excellent reliability (0.90 and above), high reliability (0.70-0.90), moderate reliability (0.50- 0.70) and low reliability (0.50 and below) (Hinton et al, 2004, pp 364).

The aforementioned values suggest that of the eleven constructs, three possess excellent reliability and the remaining fourteen illustrate high reliability. None of the constructs demonstrated a moderate or low reliability (Table 5.23). The high Cronbach's α values for all constructs imply that they are internally consistent.

The summary of the reliability analysis prior to factor analysis is illustrated in Table 5.23. The Cronbach's alpha values for all the variables constructs that has been used in this study analysis, exceed the critical value of (0.7) for social science research and demonstrate good internal consistency of each of the composite constructs (Hair *et.al*, 2010). Thus, it provides strong evidence that all the items in each constructs are reliable. Table 5.24 presents the means (M) and standard deviation (S.V) for the respondents. To give the mean some meanings, only (Use) have a highest mean of 6 and all the other constructs have a highest mean of 7. The respondents showed strong agreement for all the items of perceived ease of use, perceived usefulness, relative advantage, and compatibility. For example, the respondents showed strong agreement on the items for perceived ease of use (PEOU1, PEOU2, PEOU3, PEOU4), as the mean score varies between (M= 5.47, SD=1.197) and (M= 5.14, SD= 1.182) (Table 5.24) with an average score of (M=5.38, SD= 1.01) (Table 5.23). The respondents agreed strongly for the two items of the relative advantage constructs, where the item RAI scored (M= 5.12, SD= 1.296) and RA2 scored (M= 5.03, SD= 1.254) (Table 5.24) with the high average score of aggregate measure (M = 5.08, SD = 1.198) (Table 5.23). A strong agreement was also made for the process gratifications with an average score of (M = 5.50, SD = .948), content gratifications (M = 5.58, SD = .969), and social gratifications (M = 4.32, SD = 1.627) (Table 5.23). Amongst the normative constructs, the importance of media influence was less agreed with an average mean score of (M= 3.86) and standard deviations of (SD= 1.268) (Table 5.23). The importance of interpersonal influence also was less agreed with an average mean score of (M= 3.90) and standard deviations of (SD= 1.302) (Table 5.23) primary influence rated above average (M = 4.75, SD = 1.68) Amongst the control beliefs constructs, strong agreement was made for all the constructs namely; accessibility with an average mean score of (M= 5.57) and standard deviations of (SD= 1.206), affordability with an average mean score of (M= 5.24) and standard deviations of (SD= 1.146), capacity with an average mean score of (M= 5.45) and standard deviations of (SD= 1.084), and finally availability with an average mean score of (M= 5.31) and standard deviations of (SD= 1.01). The respondents showed also strong agreement for trust in government, trust in Internet, and perceived risk items. For example, strong agreement was made for trust in government with an average mean score of (M= 5.11) and standard deviations of (SD= 1.146).

Table 5.23 Reliability of measurements

	Constructs	N	#Items	Mean	S.D	(α)	Type
1	Perceived Ease of Use	510	4	5.38	1.007	.883	High Reliability
2	Perceived Usefulness	510	3	5.11	1.126	.895	High Reliability
3	Relative Advantage	510	2	5.08	1.198	.867	High Reliability
4	Compatibility	510	3	4.84	1.104	.927	Excellent Reliability
5	Accessibility	510	3	5.57	1.206	.879	High Reliability
6	Affordability	510	3	5.24	1.146	.839	High Reliability
7	Capacity	510	3	5.45	1.084	.837	High Reliability
8	Availability	510	4	5.31	1.009	.933	Excellent Reliability
9	Interpersonal Influence	510	4	3.90	1.302	.891	High Reliability
10	Government Influence	510	2	4.50	1.397	.920	High Reliability
11	Media Influence	510	4	3.86	1.268	.915	Excellent Reliability
12	Process Gratifications	510	6	5.50	.948	.891	High Reliability
13	Content Gratifications	510	5	5.58	.969	.890	High Reliability
14	Social Gratifications	510	3	4.32	1.627	.917	Excellent Reliability
15	Perceived Behaviour Control	510	3	5.38	1.132	.902	Excellent Reliability
16	Behavioural Intention	510	3	4.92	1.327	.944	Excellent Reliability
17	Attitude	510	4	4.90	1.179	.894	High Reliability
18	Use	510	3	5.24	.839	.719	High Reliability
19	Subjective Norms	510	3	4.04	1.280	.894	High Reliability
20	Government Satisfaction	360	6	5.16	1.045	.933	Excellent Reliability
21	Internet Satisfaction	510	8	5.91	.869	.822	High Reliability
22	Trust Government	510	4	5.11	1.146	.955	Excellent Reliability
23	Trust Internet	510	3	5.01	1.136	.925	Excellent Reliability
24	Perceived Trust	510	5	4.70	1.077	.916	Excellent Reliability
25	Perceived Risk	510	3	4.47	.959	.779	High Reliability

N= Sample Size

Table 5.24 Descriptive Statistics

Item	N	Mean	S.D	Item	N	Mean	S.D
PEOU1	510	5.14	1.182	ATT2	510	5.08	1.354
PEOU2	510	5.47	1.197	ATT3	510	4.89	1.470
PEOU3	510	5.45	1.176	ATT4	510	4.57	1.288
PEOU4	510	5.44	1.126	PBC1	510	5.34	1.251
PU1	510	5.31	1.187	PBC2	510	5.27	1.220
PU2	510	4.99	1.244	PBC3	510	5.53	1.243
PU3	510	5.02	1.281	SN1	510	4.35	1.329
RA1	510	5.12	1.296	SN2	510	3.87	1.451
RA2	510	5.03	1.254	SN3	510	3.92	1.447
COMP1	510	4.98	1.260	BI1	510	4.73	1.470
COMP2	510	5.08	1.267	BI2	510	5.07	1.401
COMP3	510	4.91	1.254	BI3	510	5.08	1.417
COMP4	510	4.40	1.498	BI4	510	4.82	1.446
ACC1	510	5.68	1.383	USE1	510	4.82	1.355
ACC2	510	5.31	1.425	USE2	510	5.60	.803
ACC3	510	5.73	1.215	USE3	510	5.31	.903
AF1	510	5.57	1.354	IS1	510	5.86	1.102
AF2	510	5.70	1.299	IS2	510	5.87	.976
AF3	510	4.45	1.657	IS3	510	5.79	.964
CAP1	510	5.55	1.204	IS4	510	5.52	1.142
CAP2	510	5.69	1.136	IS5	510	5.88	1.005
CAP3	510	5.59	1.225	IS6	510	6.09	.988
CAP4	510	5.06	1.661	IS7	510	6.09	1.117
CAP5	510	5.37	1.265	IS8	510	6.20	.975
AV1	510	4.72	1.469	PG1	510	5.48	1.155
AV2	510	5.20	1.261	PG2	510	5.79	1.125
AV3	510	5.70	1.197	PG3	510	5.84	1.048
AV4	510	5.61	1.338	PG4	510	5.13	1.338
II1	510	3.80	1.420	PG5	510	5.23	1.269
II2	510	4.20	1.409	PG6	510	5.56	1.116
II3	510	3.71	1.480	CG1	510	5.16	1.314
MI1	510	3.91	1.507	CG2	510	5.81	1.048
MI2	510	3.99	1.314	CG3	510	5.75	1.040
MI3	510	3.62	1.496	CG4	510	5.50	1.162
MI4	510	3.91	1.359	CG5	510	5.68	1.080
GI1	510	4.43	1.484	SG1	510	3.97	1.860
GI2	510	4.58	1.420	SG2	510	4.54	1.671
ATT1	510	5.05	1.293	SG3	510	4.45	1.736
ATT2	510	5.08	1.354	TG1	510	5.19	1.173
TG2	510	5.13	1.201	PT2	510	5.05	1.154
TG3	510	5.19	1.175	PT3	510	4.78	1.225
TG4	510	4.94	1.327	PT4	510	4.43	1.344

TI1	510	5.08	1.227	PT5	510	4.64	1.176
TI2	510	4.98	1.213	PR1	510	4.70	1.147
TI3	510	4.97	1.215	PR2	510	4.32	1.175
PT1	510	4.63	1.314	PR3	510	4.37	1.133

5.4.2 Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) Test and Bartlett's Test of Sphericity

Before conducting a factor analysis, it is essential to perform a test for sampling adequacy and sphericity. These two tests confirm whether it is worth proceeding with factor analysis (Hinton et al, 2004). To ensure the suitability of employing factor analysis, Kaiser-Meyer-Olkin (KMO) test was used. In order to test whether the variables in a given sample are acceptable to correlate, the KMO is assessed using correlations and partial correlations. According to Brace et al (2003) and Hinton et al (2004) a KMO value of 0.5 is poor, 0.6 is acceptable and a value closer to 1 is better. The results illustrated in Table 5. 25 (KMO = 0.946) confirm that the KMO test supports the sampling adequacy and recommend conducting factor analysis. Moreover, higher KMO values show the possibility of factor existence in data as it was assumed in the conceptual model.

Table 5.25 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.946
Bartlett's Test of Sphericity	Approx. Chi-Square	32966.212
	DF	4465
	Sig.	.000

Bartlett's test of sphericity is conducted for the purpose of confirming the relationship between the variables. If there is no relationship then it is irrelevant to undertake factor analysis. As a general rule, a p value < 0.05 indicates that it is appropriate to continue with the factor analysis (Brace et al, 2003; Hinton et al, 2004). The results illustrated in Table 5.25 suggest that the calculated p value is < 0.00 , which means that there are relationships between the constructs in question. Therefore, it was considered appropriate to continue with the factor analysis.

5.5 CONFIRMATORY FACTOR ANALYSIS

Factor analysis is the oldest and best-known statistical procedure for investigating relations between sets of observed and latent variables. Factor analysis allows the researcher to examine the co-variation among a set of observed variables in order to gather information on their underlying latent constructs (i.e., factors) (Byrne, 2013). When the researcher has some

knowledge of the underlying latent variable structure, confirmatory factor analysis (CFA) is appropriately used. Based on knowledge of the theory and empirical research, the researcher suggests relations between the observed measures and the underlying factors then tests this hypothesized structure statistically. The factor analytic model focuses solely on how and to which extent the observed variables are linked to their underlying latent factors. More specifically, it is concerned with the extent to which the observed variables are generated by the underlying latent constructs and thus strength of the regression paths from the factors to the observed variables (the factor loadings) are of primary interest. Although inter-factor relations are also of interest, any regression structure among them is not considered in the factor analytic model. Because the CFA model focuses solely on the link between factors and their measured variables, within the framework of SEM, it represents what has been termed a measurement model. Measurement model specifies the relationships between the observed variables and latent variables or hypothetical constructs (factors). According to Hair et al., (2006), combining the CFA results with construct validity tests would enable researchers to gain a better understanding of the quality of their measures.

Multiple fit indices were used to assess the model's goodness of fit including; the Chi-Square χ^2 value and the associated degree of freedom (df), the goodness of fit index (GFI), the adjusted goodness of fit index (AGFI), the two reliable indicators Tucker-Lewis Index (TLI) and Comparative fit index (CFI), and The Root mean square error of approximation (RMSEA).

Hair et al. (2009) provides some guidelines for using fit indices in different situations. The guidelines consider different sample size, model complexity, and degree of error in model specification. He stated that the quality of fit depends heavily on model characteristics including sample size and model complexity. For example, more complex model with larger samples should not be held to the same strict standards, and so when samples are large and the model contains a large numbers of measurement variables and parameters estimates, cut-off values of 0.95 on key goodness of fit measures are unrealistic. In this study the sample is more than 250 and the number of observed variables exceeds 30. Based on this, significant p-values CFI or TLI expected to be above .90, Relative Non-centrality Index (RNI) above .90, Standardised root mean residual (SRMR) .08 or less (with CFI above .92), RMSEA values < .07 with CFI = .90 or higher. Table 5.26 provides characteristics of different fit indices demonstrating Goodness-of-Fit across different model situations.

Of 86 item scales developed from the research model, a further attempt at refinement, and validation of the factor structure was made using CFA for each construct (or factor). This provides a better understanding of what items truly measure the factors identified in the research model.

Table 5.26 Characteristics of different fit indices demonstrating Goodness-of-Fit across different model situations

No. of Stat. Vars. (m)	N < 250			N > 250		
	m ≤ 12	12 < m < 30	m ≥ 30	m ≤ 12	12 < m < 30	m ≥ 30
Chi-Square χ^2	Insignificant p-values expected	Significant p-values even with good fit	Significant p-values expected	Insignificant p-values even with good fit	Significant p-values expected	Significant p-values expected
CFI or TLI	.97 or better	.95 or better	Above .92	.95 or better	Above .92	Above .90
RNI	May not diagnose misspecification well	.95 or better	Above .92	.95 or better, not used with N > 1000	Above .92, not used with N > 1000	Above .90, not used with N > 1000
SRMR	Biased upward, use other indices	.08 or less (with CFI of .95 or higher)	Less than .09 (with CFI above .92)	Biased upward; use other indices	.08 or less (with CFI above .92)	.08 or less (with CFI above .92)
RMSEA	Values < .08 with CFI = .97 or higher	Values < .08 with CFI = .95 or higher	Values < .08 with CFI = .92 or higher	Values < .07 with CFI = .97 or higher	Values < .07 with CFI = .92 or higher	Values < .07 with CFI = .90 or higher

Note: m=number of observed variables; N applies to number of observations per group when applying CFA to multiple groups at the same time.

Source: Hair et al. (2009)

CFA was conducted on all the variables to check whether all items load significantly on their respective (or hypothesised) variable, and whether they provide a more satisfactory account of the model fit. Items were dropped in some cases on the basis of the variance explained, the path loading, and the standardized residual value and the factor structure was gradually refined and revised based on significant findings from the multiple model runs. The results are giving in the following sub sections.

5.5.1 CFA control beliefs factors

Since control beliefs were decomposed into accessibility, affordability, availability and capacity, the items of these four constructs are included in one measurement model to rigorously test the validity. A total of 13 items were developed to measure the four constructs. A confirmatory factor analysis was conducted to determine whether the items load satisfactorily to measure this construct. Looking at the overall model fit for control beliefs factors, the researcher found that the goodness of fit index (GFI) value was 0.949, which was greater than acceptable level 0.90, and the value of the adjusted goodness of fit index (AGFI) was 0.923, which was also greater than the acceptable value of 0.80. The two reliable indicators Tucker-Lewis Index (TLI) and Comparative fit index (CFI) values were 0.973 and 0.980, respectively. Both were more than the acceptable level of 0.90. The RMSEA value was 0.058, which indicated acceptable fit. Table 5.27 shows the overall fit indices for control beliefs factors.

Table 5.27 Overall fit indices for control beliefs

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Default M	.053	2.445	.960	.938	.984	.979	.984
Saturated M			1.000		1.000		1.000

Table 5.27 Overall fit indices for control beliefs

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Independence M	.364		.200	.066	.000	.000	.000

As a rule, the significant factor loading should not be less than 0.5. The results indicate that all the standardised loading estimates are higher than 0.5, with the lowest value equaling 0.69. All the critical ratios (*t*-value) were significant above the threshold of ± 1.96 ($p < 0.001$).

The Squared Multiple Correlation (SMC) is the communality estimate for an indicator variable. The communality measures the percent of variance in a given indicator variable explained by its latent variable (factor) and may be interpreted as the reliability of the indicator. If a variable has low theoretic importance and a low communality, it may be targeted for removal in the model-modification (Byrne, 2013). This is the case with the item (AF3) which have low regression weight of 0.569 and low SMC of .151. This item may cause a problem with the final measurement model and need to be deleted. SMC is also the statistical method used to calculate the multicollinearity. SMC between each variable, and all other variables with a value of >0.90 indicate the existence of multicollinearity (Tabchnick and Fidell, 2006). The results indicate that all the SMC are less than 0.90, with the highest value equaling 0.851 (See Table 5.28).

Table 5.28 Unstandardized and Standardized Estimates for control beliefs

[Legend: R.W: Regression weight, S.E: Standard error, C.R: Critical ratio, S.R.W: Standardized regression weights, S.M.C: Squared multiple correlation, ACC: Accessibility, AF: Affordability, CAP: Capacity, AV: Availability]

Structural Relation	R.W	S.E	C.R	S.R.W	S.M.C
ACC3 ← Access	.945	.039	24.052	.895	.801
ACC2 ← Access	.999	.047	21.164	.807	.652
ACC1 ← Access	1.000			.833	.693
AF2 ← Affordable	1.002	.045	22.482	.872	.760
AF1 ← Affordable	1.000			.835	.697
CAP3 ← Capacity	1.058	.038	27.983	.902	.814
CAP2 ← Capacity	1.004	.027	37.730	.923	.851
CAP1 ← Capacity	1.000			.867	.752
AV3 ← Available	1.249	.069	18.097	.908	.824
AV2 ← Available	1.000			.690	.476
CAP5 ← Capacity	.991	.042	23.395	.818	.669
AV4 ← Available	1.251	.075	16.666	.813	.662

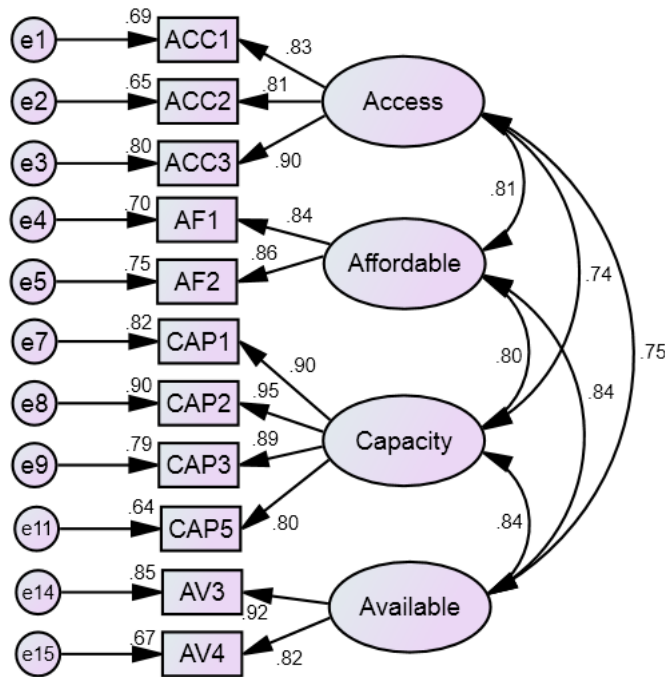


Figure 5.23 Confirmatory factor model for control beliefs

5.5.2 CFA attitudinal beliefs factors

The attitudinal beliefs were decomposed into perceived ease of use, perceived usefulness, compatibility and relative advantage, the items of these four constructs are included in one measurement model to rigorously test the validity. A total of 13 items were developed to measure the four constructs. A confirmatory factor analysis was conducted to determine whether the items load satisfactorily to measure this construct.

Perceived usefulness (PU) items loaded with relative advantage (RA) items and compatibility (COMP) items. In diffusion of innovation research RA and COMP items loaded together (Moore and Benbasat, 1991; Carter and Bélanger, 2003, 2005). This may mean that, while each one of them conceptually different, they are being viewed identically by respondents or that there is a causal relationship between them (Moore and Benbasat, 1991). For example, ‘it is unlikely that respondents would perceive the various advantages of using e-government services, if its use were in fact not compatible with the respondents’ experience (Moore and Benbasat, 1991). PU and RA Perceived usefulness refers to the belief that a new technology will help one accomplish a task, while relative advantage refers to the belief that an innovation will allow one to complete a task more easily than he or she can currently. Conceptually, these two constructs are very similar.

They both refer to the use of an innovation to facilitate and ease the attainment of some goal. As RA and PU capture essentially the same concept, we decided to drop RA from further analysis.

A second CFA model of the attitudinal beliefs was specified in which the factor of relative advantage was deleted. Looking at the overall model fit, the researcher found that the goodness of fit index (GFI) value was 0.970, which was greater than acceptable level 0.90, and the value of the adjusted goodness of fit index (AGFI) was 0.946, which was also greater than the acceptable value of 0.80. The two reliable indicators Tucker-Lewis Index (TLI) and Comparative fit index (CFI) values were 0.983 and 0.989, respectively. Both were more than the acceptable level of 0.90. The RMSEA value was 0.055, which indicated acceptable fit. Table 5.29 shows the overall fit indices for attitudinal beliefs factors.

Table 5.29 Overall fit indices for attitudinal beliefs

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Default M	.055	2.567	.970	.946	.983	.989	.989
Saturated M			1.000		1.000		1.000
Independence M	.425	92.723	.243	.074	.000	.000	.000

As a rule, the significant factor loading should not be less than 0.5. The results indicate that all the standardised loading estimates are higher than 0.5, with the lowest value equaling 0.765. All the critical ratios (*t*-value) were significant above the threshold of ± 1.96 ($p < 0.001$).

The Squared Multiple Correlation (SMC) is the communality estimate for an indicator variable. The communality measures the percent of variance in a given indicator variable explained by its latent variable (factor) and may be interpreted as the reliability of the indicator. If a variable has low theoretic importance and a low communality, it may be targeted for removal in the model-modification (Byrne, 2013). SMC is also the statistical method used to calculate the multicollinearity. SMC between each variable, and all other variables with a value of >0.90 indicate the existence of multicollinearity (Tabchnick and Fidell, 2006). The results indicate that all the SMC are less than 0.90, with the highest value equaling 0.879 (See Table 5.30).

Table 5.30 Unstandardized and Standardized Estimates for attitudinal beliefs

[Legend: R.W: Regression weight, S.E: Standard error, C.R: Critical ratio, S.R.W: Standardized regression weights, S.M.C: Squared multiple correlation, PEOU: Perceived ease of use, PU: Perceived usefulness, COMP: Compatibility]

Structural Relation	R.W	S.E	C.R	S.R.W	S.M.C
PEOU4 ← PEOU	.882	.041	21.755	.805	.649
PEOU3 ← PEOU	1.000			.875	.765
PEOU2 ← PEOU	.981	.040	24.785	.843	.710
PEOU1 ← PEOU	.880	.044	20.029	.765	.586

Table 5.30 Unstandardized and Standardized Estimates for attitudinal beliefs

[Legend: R.W: Regression weight, S.E: Standard error, C.R: Critical ratio, S.R.W: Standardized regression weights, S.M.C: Squared multiple correlation, PEOU: Perceived ease of use, PU: Perceived usefulness, COMP: Compatibility]

Structural Relation	R.W	S.E	C.R	S.R.W	S.M.C
COMP2 ← COMP	1.033	.032	31.820	.920	.846
COMP3 ← COMP	.985	.034	29.266	.886	.785
PU1 ← PU	1.000			.843	.710
PU2 ← PU	1.067	.048	22.114	.858	.736
PU3 ← PU	1.201	.041	21.755	.938	.879
COMP1 ← COMP	1.000			.896	.802

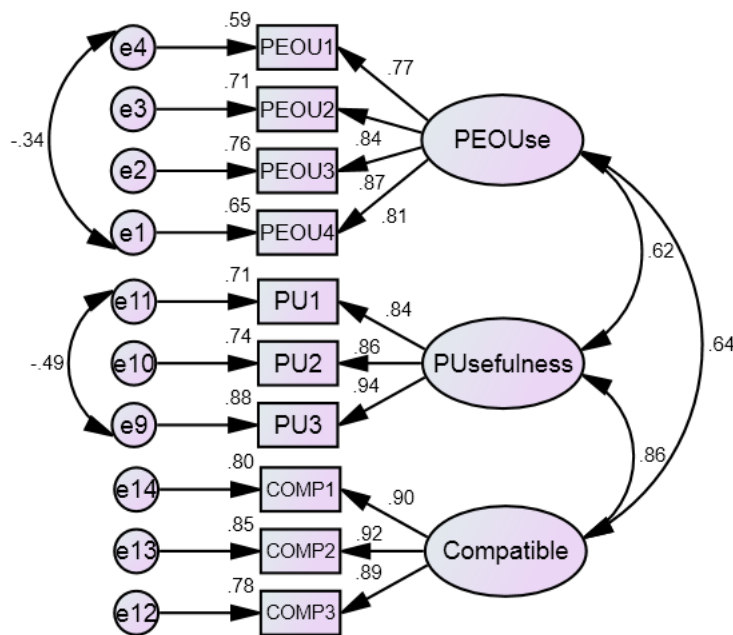


Figure 5.24 Confirmatory factor model for attitudinal beliefs

5.5.3 CFA for normative beliefs factors

Normative beliefs were decomposed into interpersonal influence (II), media influence (MI), and government influences (GI), the items of these three constructs are included in one measurement model to rigorously test the validity. A total of 9 items were developed to measure the three constructs. A confirmatory factor analysis was conducted to determine whether the items load satisfactorily to measure this construct. Looking at the overall model fit for normative beliefs factors, the researcher found that the goodness of fit index (GFI) value was 0.973, which was greater than acceptable level 0.90, and the value of the adjusted goodness of fit index (AGFI) was .942, which was also greater than the acceptable value of 0.80. The two reliable indicators Tucker-

Lewis Index (TLI) and Comparative fit index (CFI) values were 0.977 and 0.986, respectively. Both were more than the acceptable level of 0.90. The RMSEA value was 0.069, which indicated acceptable fit. Table 5.31 shows the overall fit indices for normative beliefs factors.

Table 5.31 Overall fit indices for normative beliefs

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Default M	.069	3.457	.973	.942	.986	.977	.986
Saturated M			1.000		1.000		1.000
Independence M	.458	107.784	.322	.128	.000	.000	.000

As a rule, the significant factor loading should not be less than 0.5. The results indicate that all the standardised loading estimates are higher than 0.5, with the lowest value equaling 0.833. All the critical ratios (*t*-value) were significant above the threshold of ± 1.96 ($p < 0.001$).

The Squared Multiple Correlation (SMC) is the communality estimate for an indicator variable. The communality measures the percent of variance in a given indicator variable explained by its latent variable (factor) and may be interpreted as the reliability of the indicator. If a variable has low theoretic importance and a low communality, it may be targeted for removal in the model-modification (Byrne, 2013). SMC between each variable, and all other variables with a value of >0.90 indicate the existence of multicollinearity (Tabchnick and Fidell, 2006). The results indicate that SMC for EI5 > 0.90 and since the government influence measurement consists of 2 items only, government influence was excluded. All other SMC are less than 0.90, with the highest value equaling 0.801 (See Table 5.32).

Table 5.32 Unstandardized and Standardized Estimates for normative beliefs

[Legend: R.W: Regression weight, S.E: Standard error, C.R: Critical ratio, S.R.W: Standardized regression weights, S.M.C: Squared multiple correlation, II: Interpersonal influence, EI: External influence]

Structural Relation	R.W.	S.E.	C.R.	S.R.W.	(SMC)
II3 ← Interpersonal_I	1.018	.044	23.389	.841	.707
II2 ← Interpersonal_I	1.000	.040	24.710	.868	.753
III1 ← Interpersonal_I	1.000			.861	.741
EI3 ← Media_I	.952	.041	23.380	.833	.694
EI2 ← Media_I	.895	.034	26.474	.891	.794
EI1 ← Media_I	1.000			.869	.755
EI6 ← Government_I	.873	.062	14.183	.882	.778
EI5 ← Government_I	1.000			.966	.920

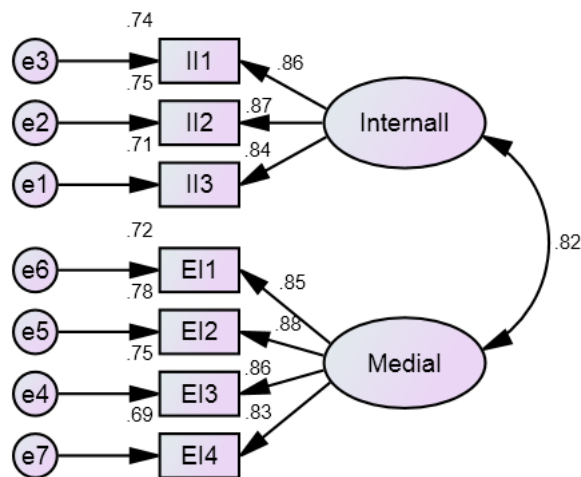


Figure 5.25 Confirmatory factor model for normative beliefs

5.5.4 CFA for gratifications

Since content, process, and social are three dimensions of U&G, the items of these three constructs are included in one measurement model to rigorously test the validity. A three-factor model with all indicators of these three constructs of uses and gratifications theory was estimated using confirmatory factor analyses (CFA). A total of 14 items were used to measure the three constructs. A confirmatory factor analysis was conducted to determine whether the items load satisfactorily to measure this construct. After running the first analysis, the range model fit was poor. Different criteria were used to determine how well the data fits the proposed models. In this case, GFI and AGFI values were 0.852 and 0.790, respectively. Both values were less than the acceptable level. In addition, TLI and CFI values were 0.894 and 0.852, respectively. Both values were less than the acceptable level. The RMSEA value was 0.113, which indicated poor model fit. Also, CMIN/DF was not within the acceptable level (7.463). From the analysis, all item loadings were over 0.5 which indicates that all items' loadings on their corresponding construct demonstrating adequate convergent validity.

AMOS yields two types of information that can be helpful in detecting model misspecification—the standardized residuals and the modification indices (Joreskog and Sorbom, 1993). Standardized residual covariance (SRC) and modification indices (MI) were used to assess the removal of any further items, to obtain a better model fit. The standardized residuals were observed and all the values were < 2.58 . However, some modification indices of the U&G model were large and unidimensionality was not achieved. Based on the large modification indices, it was decided

to covariance the items with large MI and run the analysis to get a good model fit. Figure 5.9 shows the confirmatory factor analysis for the Gratifications.

After running the second analysis, the model fit showed a marked improvement with an acceptable indices value. CMIN/DF and RMSEA values were 3.977 and 0.076, respectively. GFI and AGFI values were 0.928 and 0.889, respectively. TLI and CFI values were 0.951 and 0.964. All these values were acceptable. All of the factor loadings were over 0.5 and all critical ratios were higher than 1.96 (See Table 5.33).

Table 5.33 Overall fit indices for gratifications

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Default M	.076	3.977	.928	.889	.964	.951	.964
Saturated M			1.000		1.000		1.000
Independence M	.346	62.064	.226	.106	.000	.000	.000

As a rule, the significant factor loading should not be less than 0.5. The results indicate that all the standardised loading estimates are higher than 0.5, with the lowest value equaling 0.627. PG4 may cause a problem in the final measurement model and need to be deleted. All the critical ratios (*t*-value) were significant above the threshold of ± 1.96 ($p < 0.001$). The results also indicate that all the SMC are less than 0.90, with the highest value equaling 0.861 (See Table 5.34).

Table 5.34 Unstandardized and Standardized Estimates for gratifications

Structural Relation	R.W.	S.E.	C.R.	S.R.W.	(SMC)
PG1 ← Process_G	1.000			.775	.600
PG2 ← Process_G	1.021	.053	19.356	.812	.659
PG3 ← Process_G	.962	.049	19.516	.821	.675
PG4 ← Process_G	.627	.066	14.664	.627	.393
PG5 ← Process_G	.972	.062	15.737	.686	.470
PG6 ← Process_G	.954	.054	17.816	.766	.586
CG1 ← Content_G	.664	.062	16.187	.664	.441
CG2 ← Content_G	1.000			.914	.835
CG3 ← Content_G	.971	.032	30.658	.894	.800
CG4 ← Content_G	.810	.044	24.489	.657	.657
CG5 ← Content_G	.892	.038	23.246	.791	.626
SG1 ← Social_G	1.000			.826	.682
SG2 ← Social_G	1.009	.039	26.089	.928	.861
SG3 ← Social_G	1.033	.040	25.801	.914	.836

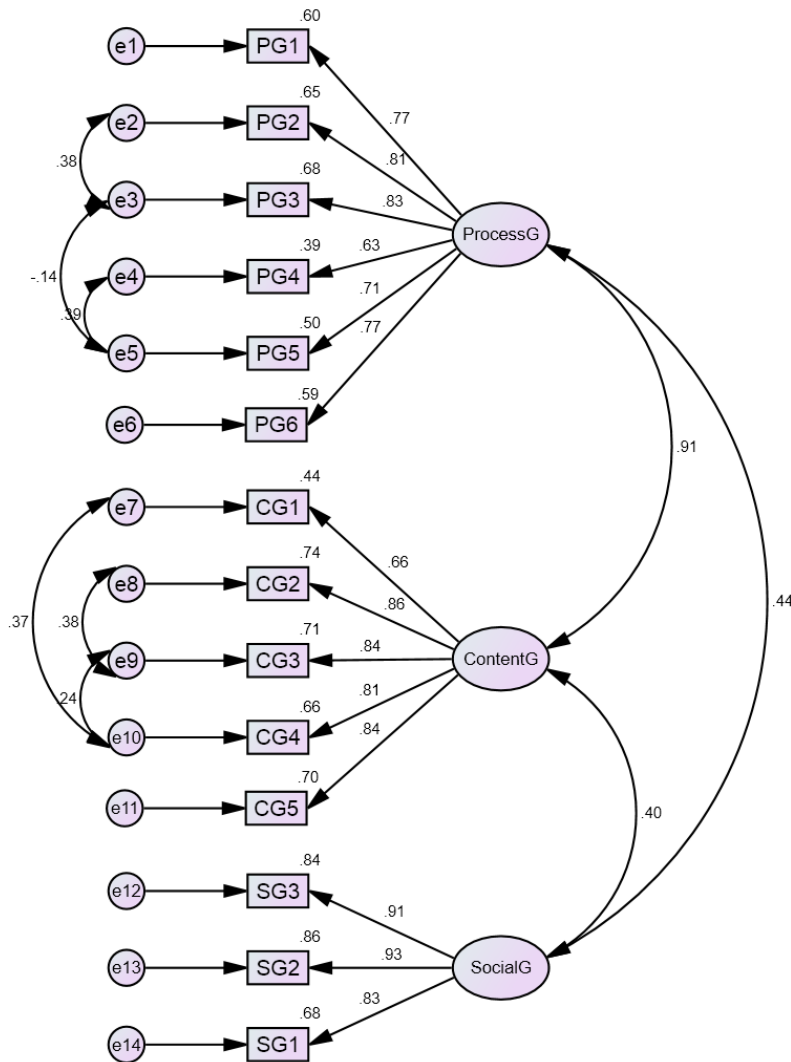


Figure 5.26 Confirmatory factor model for Gratifications

5.5.5 CFA for perceived behavioural control, attitude, and subjective norms

The items of perceived behavioural control (PBC), attitude (ATT), and subjective norm (SN) are included in one measurement model to rigorously test the validity.

A total of 10 items were developed to measure the three constructs. A confirmatory factor analysis was conducted to determine whether the items load satisfactorily to measure this construct. Looking at the overall model fit, the researcher found that the goodness of fit index (GFI) value was 0.980, which was greater than acceptable level 0.90, and the value of the adjusted goodness of fit index (AGFI) was 0.959, which was also greater than the acceptable value of 0.80. The two reliable indicators Tucker-Lewis Index (TLI) and Comparative fit index (CFI) values were 0.986 and 0.991, respectively. Both were more than the acceptable level of 0.90. The

RMSEA value was 0.055, which indicated acceptable fit. Table 5.34 shows the overall fit indices for this measurement model (See Table 5.35).

Table 5.35 Overall fit indices for PBC, ATT, and SN model

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Default M	.055	2.545	.980	.959	.991	.986	.991
Saturated M			1.000		1.000		1.000
Independence M	.459	108.010	.343	.155	.000	.000	.000

As a rule, the significant factor loading should not be less than 0.5. The results indicate that all the standardised loading estimates are higher than 0.5, with the lowest value equaling 0.730. All the critical ratios (*t*-value) were significant above the threshold of ± 1.96 ($p < 0.001$). The results also indicate that all the SMC are less than 0.90, with the highest value equaling 0.879 (See Table 5.36).

Table 5.36 Unstandardized and Standardized Estimates for PBC, ATT, and SN model

[Legend: R.W: Regression weight, S.E: Standard error, C.R: Critical ratio, S.R.W: Standardized regression weights, S.M.C: Squared multiple correlation, ACC: Accessibility, PBC: Perceived behavioural control, ATT: Attitude, SN: Subjective Norms]

Structural Relation	R.W.	S.E.	C.R.	S.R.W.	(SMC)
PBC1 ← PBCControl	1.000			.902	.813
PBC2 ← PBCControl	.942	.036	26.115	.871	.759
PBC3 ← PBCControl	.912	.038	24.249	.828	.685
ATT1 ← Attitude	1.000			.867	.752
ATT2 ← Attitude	1.096	.039	28.282	.908	.824
ATT3 ← Attitude	1.050	.048	21.996	.801	.641
ATT4 ← Attitude	.840	.044	19.108	.730	.534
SN1 ← SNorms	1.000			.733	.538
SN2 ← SNorms	1.361	.066	20.746	.914	.836
SN3 ← SNorms	1.392	.067	20.664	.937	.879

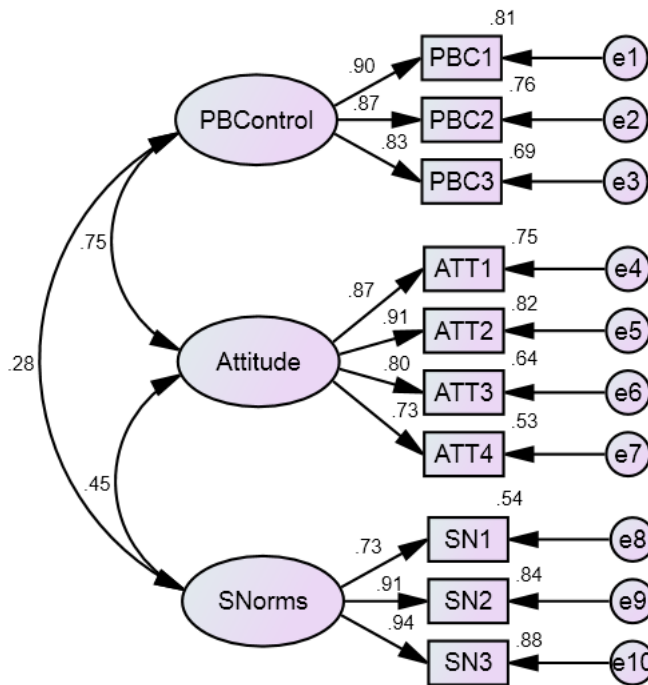


Figure 5.27 Confirmatory factor model for perceived behavioural control, attitude, and subjective norm

5.5.6 CFA for behavioural intention

A total of 4 items were developed to measure the behavioural intention. A confirmatory factor analysis was conducted to determine whether the items load satisfactorily to measure this construct. Looking at the overall model fit, the researcher found that the goodness of fit index (GFI) value was 0.989, which was greater than acceptable level 0.90, and the value of the adjusted goodness of fit index (AGFI) was 0.888, which was also greater than the acceptable value of 0.80. The two reliable indicators Tucker-Lewis Index (TLI) and Comparative fit index (CFI) values were 0.968 and 0.995, respectively. Both were more than the acceptable level of 0.90. The RMSEA value was 0.145, which indicated acceptable fit. Table 5.26 shows the overall fit indices for behavioural intention (See Table 5.37).

Table 5.37 Overall fit indices for behavioural intention

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Default M	.145	11.684	.989	.888	.995	.968	.995
Saturated M			1.000		1.000		1.000
Independence M	.811	335.594	.337	-.106	.000	.000	.000

As a rule, the significant factor loading should not be less than 0.5. The results indicate that all the standardised loading estimates are higher than 0.5, with the lowest value equaling 0.839. All the critical ratios (*t*-value) were significant above the threshold of ± 1.96 ($p < 0.001$). The results

also indicate that BI3 have SNC > 0.90, this item may cause problem later on in the analysis. All the other SMC are less than 0.90, with the highest value equaling 0.884 (See Table 5.38).

Table 5.38 Unstandardized and Standardized Estimates for control beliefs

[Legend: R.W: Regression weight, S.E: Standard error, C.R: Critical ratio, S.R.W: Standardized regression weights, S.M.C: Squared multiple correlation, BI: Behavioural intention]

Structural Relation	R.W.	S.E.	C.R.	S.R.W.	(SMC)
BI1 ← B_Intention	1.000			.839	.703
BI2 ← B_Intention	1.069	.037	29.214	.940	.884
BI3 ← B_Intention	1.093	.037	29.191	.951	.904
BI4 ← B_Intention	.999	.037	27.024	.851	.725

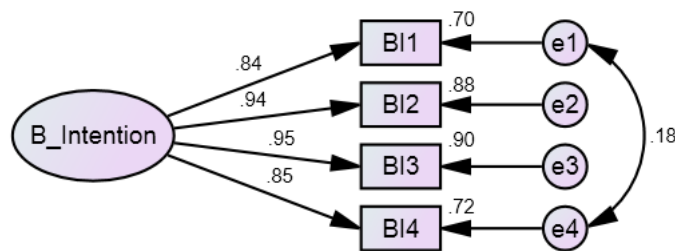


Figure 5.28 Confirmatory factor model for behavioural intention

5.5.7 CFA for use and satisfaction

Since control beliefs were decomposed into accessibility, affordability, availability and capacity, the items of these two constructs are included in one measurement model to rigorously test the validity.

A total of 11 items were developed to measure the Use and Satisfaction. A confirmatory factor analysis was conducted to determine whether the items load satisfactorily to measure this construct. Looking at the overall model fit for control beliefs factors, the researcher found that the goodness of fit index (GFI) value was 0.972, which was greater than acceptable level 0.90, and the value of the adjusted goodness of fit index (AGFI) was 0.950, which was also greater than the acceptable value of 0.80. The two reliable indicators Tucker-Lewis Index (TLI) and Comparative fit index (CFI) values were 0.983 and 0.989, respectively. Both were more than the acceptable level of 0.90. The RMSEA value was 0.050, which indicated acceptable fit. Table 5.26 shows the overall fit indices for use and satisfaction (See Table 5.39).

Table 5.39 Overall fit indices for use and satisfaction

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Default M	.050	2.287	.972	.950	.989	.983	.989
Saturated M			1.000		1.000		1.000
Independence M	.391	78.751	.267	.121	.000	.000	.000

As a rule, the significant factor loading should not be less than 0.5. The results indicate that all the standardised loading estimates are higher than 0.5, with the lowest value equaling 0.667. All the critical ratios (t -value) were significant above the threshold of ± 1.96 ($p < 0.001$). The results also indicate that all the SMC are less than 0.90, with the highest value equaling 0.869 (See Table 5.40).

Table 5.40 Unstandardized and Standardized Estimates for control beliefs

[Legend: R.W: Regression weight, S.E: Standard error, C.R: Critical ratio, S.R.W: Standardized regression weights, S.M.C: Squared multiple correlation, IS: Satisfaction]

Structural Relation	R.W.	S.E.	C.R.	S.R.W.	S.M.C
IS2 ← Satisfaction	.884	.031	28.815	.842	.709
IS3 ← Satisfaction	.875	.037	23.753	.843	.711
IS4 ← Satisfaction	.873	.049	18.007	.708	.502
USE2 ← Use	.670	.056	12.043	.774	.598
USE3 ← Use	.659	.057	11.613	.677	.459
IS1 ← Satisfaction	1.000			.840	.706
IS5 ← Satisfaction	1.012	.037	27.362	.932	.869
USE1 ← Use	1.000			.685	.469
IS6 ← Satisfaction	.838	.040	21.028	.785	.616
IS7 ← Satisfaction	.805	.048	16.712	.667	.445
IS8 ← Satisfaction	.829	.039	21.126	.787	.619

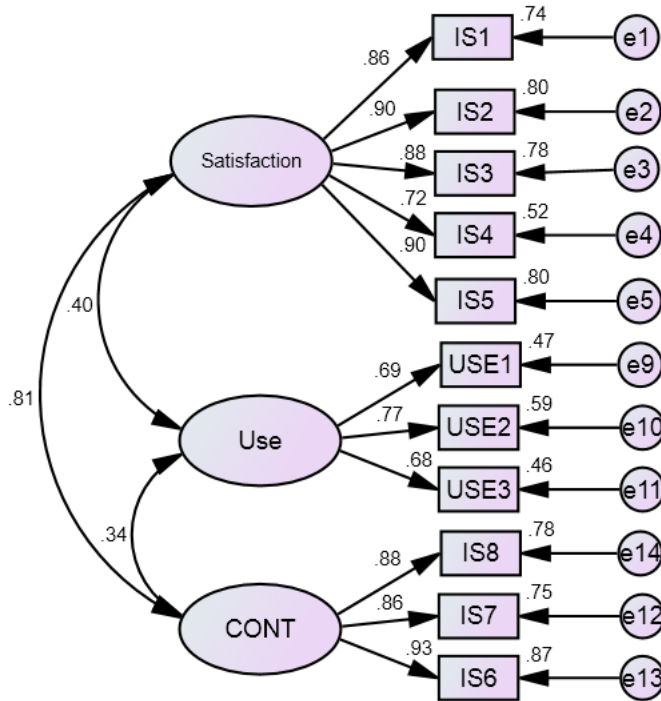


Figure 5.29 Confirmatory factor model for use and satisfaction

5.5.8 CFA for trust in government, trust in Internet, and perceived risk

The items of trust in government (TG), trust in Internet (TI), and perceived risk (PR) are included in one measurement model to rigorously test the validity. A total of 9 items were developed to measure the three constructs. A confirmatory factor analysis was conducted to determine whether the items load satisfactorily to measure this construct. Looking at the overall model fit for control beliefs factors, the researcher found that the goodness of fit index (GFI) value was 0.980, which was greater than acceptable level 0.90, and the value of the adjusted goodness of fit index (AGFI) was 0.961, which was also greater than the acceptable value of 0.80. The two reliable indicators Tucker-Lewis Index (TLI) and Comparative fit index (CFI) values were 0.989 and 0.993, respectively. Both were more than the acceptable level of 0.90. The RMSEA value was 0.040, which indicated acceptable fit. Table 5.2 shows the overall fit indices for this model (See Table 5.41).

Table 5.41 Overall fit indices for trust in government, trust in Internet, and perceived risk

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Default M	.040	1.246	.980	.961	.993	.989	.993
Saturated M			1.000		1.000		1.000
Independence M	.393	111.473	.318	.166	.000	.000	.000

As a rule, the significant factor loading should not be less than 0.5. The results indicate that all

the standardised loading estimates are higher than 0.5, with the lowest value equaling 0.637. All the critical ratios (*t*-value) were significant above the threshold of ± 1.96 ($p < 0.001$). The results also indicate that all the SMC are less than 0.90, with the highest value equaling 0.841 (See Table 5.42).

Table 5.42 Unstandardized and Standardized Estimates for trust in government, trust in Internet, and perceived risk

[Legend: R.W: Regression weight, S.E: Standard error, C.R: Critical ratio, S.R.W: Standardized regression weights, S.M.C: Squared multiple correlation, TG: Trust in government, TI: Trust in Internet, PR: Perceived risk]

	Structural Relation	R.W.	S.E.	C.R.	S.R.W.	(SMC)
TG2	← TGovernment	1.000			.890	.792
TG1	← TGovernment	.928	.030	30.671	.846	.715
TG4	← TGovernment	1.138	.045	25.391	.917	.841
PT4	← TInternet	.860	.045	19.232	.713	.508
PT5	← TInternet	.909	.034	27.079	.862	.743
PT1	← TInternet	.979	.039	25.300	.830	.689
PT3	← TInternet	1.000			.909	.827
PR3	← PRisk	.942	.070	13.379	.777	.604
PR2	← PRisk	1.000			.796	.633
PR1	← PRisk	.781	.064	12.230	.637	.406

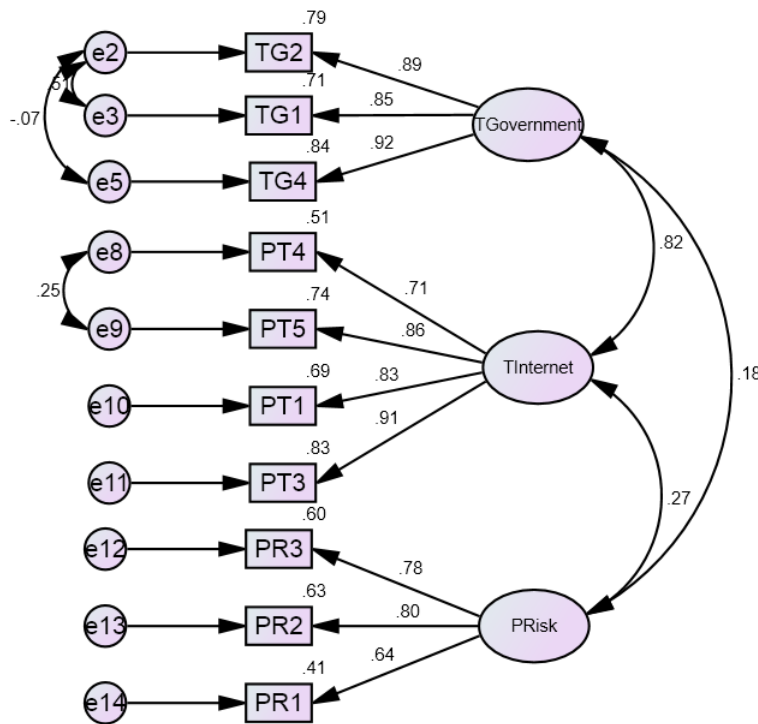


Figure 5.30 Confirmatory factor model for trust in government, trust in Internet, and perceived risk

5.6 MEASUREMENT MODEL WITH ALL THE CONSTRUCTS

The general SEM model can be decomposed into two sub-models: a measurement model, and a structural model. The measurement model defines relations between the observed and unobserved variables. In other words, it provides the link between scores on a measuring instrument (i.e., the observed indicator variables) and the underlying constructs they are designed to measure (i.e., the unobserved latent variables). The measurement model, then, represents the CFA model that specifies the pattern by which each measure loads on a particular factor. In contrast, the structural model defines relations among the unobserved variables. Accordingly, it specifies the manner by which particular latent variables directly or indirectly influence (i.e., “cause”) changes in the values of certain other latent variables in the model (Byrne, 2013). Structural model is presented in section 5.7. In this section the measurement model with the validity assessment is presented.

A confirmatory factor analysis using AMOS 20.0 was conducted to test the full measurement model. Seven common model-fit measures were used to assess the model's overall goodness of fit: the ratio of Chi square (χ^2) to degrees-of-freedom (df), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), Tucker-Lewis Index (TLI), Incremental Index of Fit (IFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). As shown in Table 5.43, all the model-fit indices exceeded their respective common acceptance levels suggested by previous research, thus demonstrating that the measurement model exhibited a fairly good fit with the data collected ($\chi^2 = 90.28$ with $df=62$, $CMIN/DF=1.246$, $GFI=0.980$, $AGFI=0.961$, $IFI=0.993$, $TLI=0.989$, $CFI=0.993$, $RMSEA=0.040$).

Table 5.43 Overall fit indices of measurement model with all constructs

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Default M	.040	1.246	.980	.961	.993	.989	.993
Saturated M			1.000		1.000		1.000
Independence M	.393	111.473	.318	.166	.000	.000	.000

From the above, the measurement model with all constructs showed a good fit for all indices. Table 5.44 shows path loadings, critical ratios (C.R.), and R square values in the measurement model.

As a rule, the significant factor loading should not be less than 0.5. The results indicate that all the standardised loading estimates are higher than 0.5, with the lowest value equaling 0.667. All the critical ratios (t -value) were significant above the threshold of ± 1.96 ($p < 0.001$). The results also indicate that all the SMC are less than 0.90, with the highest value equaling 0.869 (See Table 5.44).

Therefore, we could proceed to evaluate the psychometric properties of the measurement model in terms of reliability, convergent validity, and discriminant validity.

Table 5.44 Unstandardized and Standardized Estimates for gratifications

Structural Relation		R.W.	S.E.	C.R.	S.R.W.	(SMC)
PG1	← Process_G	1.000			.775	.600
PG2	← Process_G	1.021	.053	19.356	.812	.659
PG3	← Process_G	.962	.049	19.516	.821	.675
PG4	← Process_G	.627	.066	14.664	.627	.393
PG5	← Process_G	.972	.062	15.737	.686	.470
PG6	← Process_G	.954	.054	17.816	.766	.586
CG1	← Content_G	.664	.062	16.187	.664	.441
CG2	← Content_G	1.000			.914	.835
CG3	← Content_G	.971	.032	30.658	.894	.800
CG4	← Content_G	.810	.044	24.489	.657	.657
CG5	← Content_G	.892	.038	23.246	.791	.626
SG1	← Social_G	1.000			.826	.682
SG2	← Social_G	1.009	.039	26.089	.928	.861
SG3	← Social_G	1.033	.040	25.801	.914	.836
ACC3	← Access	.945	.039	24.052	.895	.801
ACC2	← Access	.999	.047	21.164	.807	.652
ACC1	← Access	1.000			.833	.693
AF2	← Affordable	1.002	.045	22.482	.872	.760
AF1	← Affordable	1.000			.835	.697
CAP3	← Capacity	1.058	.038	27.983	.902	.814
CAP2	← Capacity	1.004	.027	37.730	.923	.851
CAP1	← Capacity	1.000			.867	.752
AV3	← Available	1.249	.069	18.097	.908	.824
AV2	← Available	1.000			.690	.476
CAP5	← Capacity	.991	.042	23.395	.818	.669
AV4	← Available	1.251	.075	16.666	.813	.662
PEOU4	← PEOU	.882	.041	21.755	.805	.649
PEOU3	← PEOU	1.000			.875	.765
PEOU2	← PEOU	.981	.040	24.785	.843	.710
PEOU1	← PEOU	.880	.044	20.029	.765	.586
COMP2	← COMP	1.033	.032	31.820	.920	.846
COMP3	← COMP	.985	.034	29.266	.886	.785
PU1	← PU	1.000			.843	.710
PU2	← PU	1.067	.048	22.114	.858	.736
PU3	← PU	1.201	.041	21.755	.938	.879
COMP1	← COMP	1.000			.896	.802

II3	←	Interpersonal_I	1.018	.044	23.389	.841	.707
II2	←	Interpersonal_I	1.000	.040	24.710	.868	.753
II1	←	Interpersonal_I	1.000			.861	.741
EI3	←	Media_I	.952	.041	23.380	.833	.694
EI2	←	Media_I	.895	.034	26.474	.891	.794
EI1	←	Media_I	1.000			.869	.755
PBC1	←	PBControl	1.000			.902	.813
PBC2	←	PBControl	.942	.036	26.115	.871	.759
PBC3	←	PBControl	.912	.038	24.249	.828	.685
ATT1	←	Attitude	1.000			.867	.752
ATT2	←	Attitude	1.096	.039	28.282	.908	.824
ATT3	←	Attitude	1.050	.048	21.996	.801	.641
ATT4	←	Attitude	.840	.044	19.108	.730	.534
SN1	←	SNorms	1.000			.733	.538
SN2	←	SNorms	1.361	.066	20.746	.914	.836
SN3	←	SNorms	1.392	.067	20.664	.937	.879
BI1	←	B_Intention	1.000			.839	.703
BI2	←	B_Intention	1.069	.037	29.214	.940	.884
BI3	←	B_Intention	1.093	.037	29.191	.951	.904
BI4	←	B_Intention	.999	.037	27.024	.851	.725
IS2	←	Satisfaction	.884	.031	28.815	.842	.709
IS3	←	Satisfaction	.875	.037	23.753	.843	.711
IS4	←	Satisfaction	.873	.049	18.007	.708	.502
USE2	←	Use	.670	.056	12.043	.774	.598
USE3	←	Use	.659	.057	11.613	.677	.459
IS1	←	Satisfaction	1.000			.840	.706
IS5	←	Satisfaction	1.012	.037	27.362	.932	.869
USE1	←	Use	1.000			.685	.469
IS6	←	Cont	.838	.040	21.028	.785	.616
IS7	←	Cont	.805	.048	16.712	.667	.445
IS8	←	Cont	.829	.039	21.126	.787	.619
TG2	←	TGovernment	1.000			.890	.792
TG1	←	TGovernment	.928	.030	30.671	.846	.715
TG4	←	TGovernment	1.138	.045	25.391	.917	.841
PT4	←	TInternet	.860	.045	19.232	.713	.508
PT5	←	TInternet	.909	.034	27.079	.862	.743
PT1	←	TInternet	.979	.039	25.300	.830	.689
PT3	←	TInternet	1.000			.909	.827
PR3	←	PRisk	.942	.070	13.379	.777	.604
PR2	←	PRisk	1.000			.796	.633

PR1	←	PRisk	.781	.064	12.230	.637	.406
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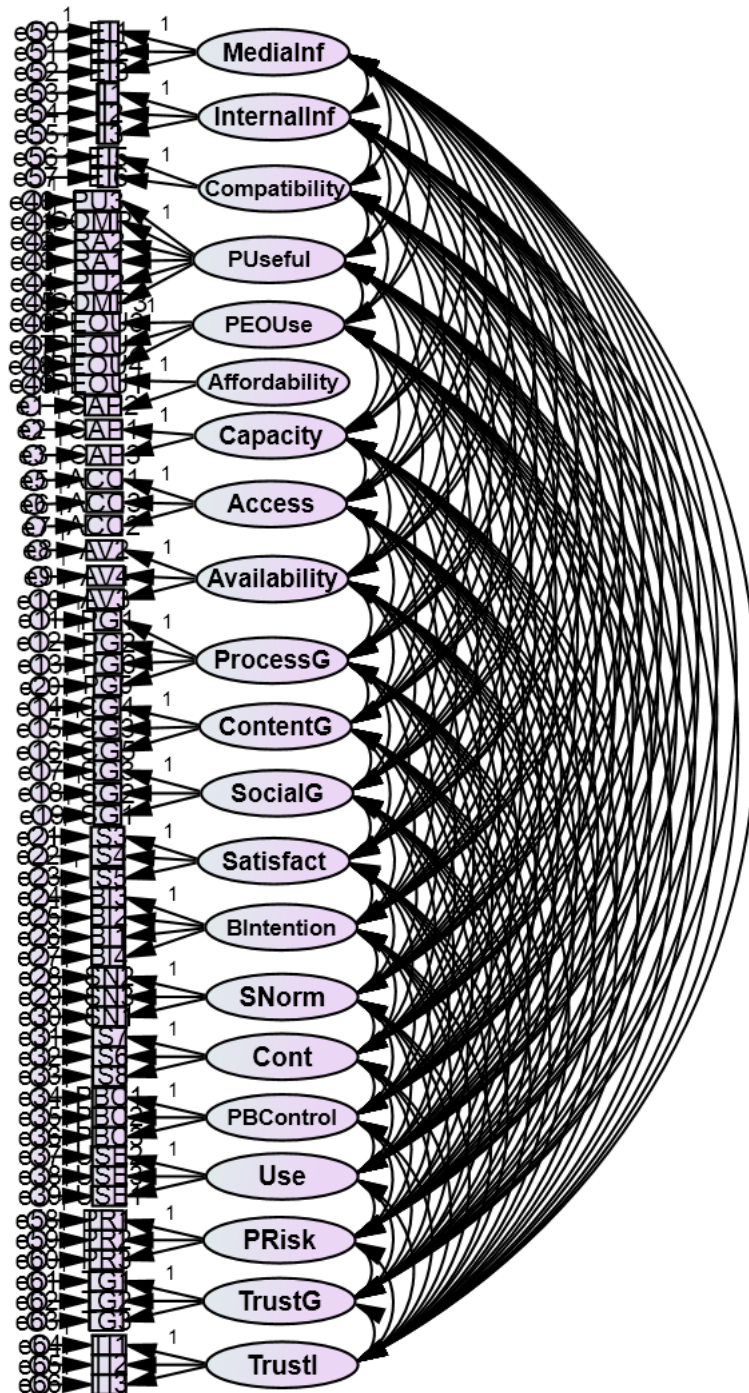


Figure 5.31 Measurement model for all the constructs

Once the model is specified and the fit indices indicate good fit, the construct validity should be assessed. Construct validity is assessed by convergent validity, and discriminant validity (Hair *et al.*, 2010). Convergent validity means assigned indicators to measure certain factor are loading relatively high (Kline, 2005). Discriminant validity refers to the degree of distinctiveness between two constructs (Hair *et al.*, 2010).

5.6.1 Validity Assessment

Validity is related with the accuracy of measures (Sekaran, 2000). Validity is defined by Zikmund (2003) as “*the ability of a scale to measure what it intended to be measured*” (p.331). In other words, it determines the extent to which a construct and its corresponding measurement indicators are related, and the extent to which these set of items actually reflect the construct they were designed to measure (Hair *et al.*, 2010). According to Neuman (2003), the better the fit between theoretical latent construct and measured items, the greater establishment of validity. Assessing the construct validity is one of the main objectives of using CFA (Hair *et al.*, 2010). Construct validity can be examined by assessing the convergent validity and the discriminant validity which are explained as follows.

5.6.1.1 Convergent validity

The convergent validity means the indicators measuring certain construct share the high proportion of variance in common (Hair *et al.*, 2010). For this study, convergent validity was assessed by examining: 1) factor loadings, which relate significantly all indicators to their respective constructs; all the absolute values of critical ratios (C.R.) of all the indicators should be greater than 1.96, at the 0.05 level of significance, 2) standardized regression coefficients, which should be greater than 0.50, and 3) the average variance extracted (AVE), which reflects the overall amount of variance in the indicators accounted for by the latent construct. Thus, higher values of the AVE indicate that the items are truly representative of the latent construct. An average variance extracted (AVE) of at least 0.50 provides support for convergent validity. The rule of thumb indicates that good AVE starts from the value of 0.5 (Hair *et al.*, 2010). As a rule for factor loading, the significant factor should not be less than 0.5. The results indicate that all the standardised loading estimates are higher than 0.5, with the lowest value equalling 0.627. All the critical ratios (*t*-value) were significant above the threshold of ± 1.96 ($p < 0.001$). Table 5.45 presents summary results of convergent validity. Average variance extracted was computed by the researcher using a formula suggested by (Fornell and Larcker, 1981; Hair *et al.*, 2006). Moreover, the construct reliability (CR) or composite reliability (Bagozzi and Yi, 1988) which measures the internal consistency computed using a formula. Both formulas are presented below.

Formula 1 for computing average variance extracted

$$AVE = \frac{\sum_{i=1}^n Li^2}{n}$$

Note: in the formula mentioned above λ represents factor loadings (standardized regression weights) and i represents the total number of items.

Formula 2 for computing construct reliability

$$CR = \frac{(\sum_{i=1}^n Li)^2}{(\sum_{i=1}^n Li)^2 + (\sum_{i=1}^n ei)}$$

Note: in the formula mentioned above λ represents factor loadings (standardized regression weights) and i represents total number of items, and δ represents the error variance term for each latent construct.

Table 5.45 Summary results of convergent validity

Construct	Factor loading	Construct reliability (CR)	Average variance extracted (AVE)
Continuity			
IS6	.785	.746	.921
IS7	.667		
IS8	.787		
Satisfaction			
IS1	.840	.833	.928
IS2	.842		
IS3	.843	.800	
IS4	.708		
IS5	.932		
IS6	.785		
IS7	.667		
IS8	.787		
Use			
USE1	.685	.712	.755
USE2	.774		
USE3	.677		
Behavioural Intention			
BI1	.839		.949
BI2	.940		

BI3	.951	.895	
BI4	.851		
Process Gratifications			
PG1	.775	.748	.868
PG2	.812		
PG3	.821		
PG4	.627		
PG5	.686		
PG6	.766		
Content Gratifications			
CG1	.664	.784	.911
CG2	.914		
CG3	.894		
CG4	.657		
CG5	.791		
Social Gratifications			
SG1	.826	.841	.920
SG2	.861		
SG3	.836		
Attitude			
ATT1	.867	.827	.899
ATT2	.908		
ATT3	.801		
ATT4	.730		
Subjective Norm			
SN1	.733	.861	.926
SN2	.914		
SN3	.937		
Perceived Behavioural Control			
PBC1	.902	.867	.901
PBC2	.871		
PBC3	.828		
Accessibility			
ACC1	.833	.845	.822
ACC2	.807		
ACC3	.895		
Affordability			
AFF1	.835	.854	
AFF2	.872		
Capacity			
CAP1	.867	.878	.939
CAP2	.923		
CAP3	.902		
CAP5	.818		
Availability			
AV2	.690	.804	.862
AV3	.908		
AV4	.813		
Perceive Ease of Use			
PEOU1	.765	.822	.892
PEOU2	.843		
PEOU3	.875		
PEOU4	.805		
Perceived Usefulness			
PU1	.843	.880	.939
PU2	.858		
PU3	.938		

Compatibility			
COMP1	.896	.901	.821
COMP2	.920		
COM3	.886		
Interpersonal Influence			
II1	.861	.857	.898
II2	.868		
II3	.841		
Media Influence			
EI1	.869	.864	.899
EI2	.891		
EI3	.833		
Government Influence			
EI5	.966	.924	
EI6	.882		
Trust in Government			
TG1	.846	.884	.920
TG2	.890		
TG4	.917		
Trust in Internet			
PT1	.689	.793	.900
PT3	.909		
PT4	.713		
PT5	.862		
Perceived Risk			
PR1	.637	.737	.782
PR2	.796		
PR3	.777		

The results presented in the previous table validate the convergent validity of the constructs in the measurement model. The standardised factor loading was above the minimum of 0.5, with significant t-values. Also, the average variance extracted was above 0.5 for all constructs, suggesting good convergence. The reliability of the constructs was above 0.7, ranging from 0.712 to 0.924, indicating good reliability.

5.6.1.2 Discriminant Validity

The discriminant validity was introduced by Hair et al., (2006: p. 771) as “the extent to which a construct is truly distinct from other construct”. For this study, discriminant validity was assessed by comparing the squared correlation between two constructs with their respective average variance extracted (AVE). The average variance extracted (AVE) of both constructs should be greater than the squared correlation between the two constructs.

Discriminant validity can be assessed using a rigorous test by comparing the average variance extracted values for any two constructs with the square of the correlation estimate between these two constructs. The rule that verifies discriminant validity is: $AVE > \text{squared correlation estimate}$. Therefore, the AVE calculated will be compared with the square of the correlation estimate between constructs, as depicted in Table 5.46. The results of the table (5.46) support the existence

of discriminant validity between constructs since the AVE between any two constructs is greater than the squared correlation estimate. In summary, the measurement model demonstrated adequate reliability, convergent validity, and discriminant validity.

Table 5.46 Discriminant validity

TI	CAP	ACC	AVA	PG	CG	SG	IS	BI	SN	CON	PBC	USE	PEOU	PU	MI	II	GI	PR	TG
0.906																			
0.540	0.915																		
0.462	0.736	0.845																	
0.530	0.829	0.753	0.870																
0.555	0.555	0.549	0.593	0.754															
0.494	0.489	0.517	0.538	0.854	0.822														
0.261	0.214	0.238	0.256	0.458	0.397	0.891													
0.466	0.635	0.577	0.664	0.681	0.593	0.336	0.850												
0.603	0.532	0.479	0.528	0.470	0.426	0.227	0.378	0.907											
0.285	0.146	0.130	0.166	0.246	0.171	0.359	0.135	0.456	0.928										
0.354	0.573	0.578	0.647	0.598	0.578	0.233	0.819	0.330	-0.029	0.892									
0.639	0.817	0.651	0.792	0.583	0.539	0.201	0.633	0.679	0.246	0.567	0.867								
0.189	0.351	0.265	0.458	0.391	0.317	0.260	0.409	0.210	0.136	0.344	0.379	0.712							
0.525	0.725	0.596	0.677	0.544	0.476	0.276	0.568	0.508	0.165	0.473	0.706	0.371	0.822						
0.594	0.538	0.520	0.510	0.524	0.468	0.374	0.398	0.745	0.482	0.360	0.597	0.239	0.659	0.848					
0.344	0.144	0.182	0.156	0.255	0.224	0.312	0.111	0.444	0.716	-0.063	0.247	0.078	0.159	0.461	0.865				
0.374	0.211	0.224	0.198	0.279	0.203	0.322	0.125	0.490	0.792	0.006	0.306	0.053	0.208	0.513	0.817	0.864			
0.227	0.270	0.327	0.227	0.222	0.198	0.125	0.156	0.373	0.369	0.175	0.316	0.105	0.254	0.299	0.371	0.371	0.923		
0.182	0.091	0.100	0.064	0.154	0.129	0.183	0.073	0.090	0.258	0.036	0.098	-0.106	0.115	0.157	0.218	0.236	0.223	0.740	
0.782	0.428	0.320	0.408	0.451	0.415	0.395	0.401	0.490	0.410	0.230	0.486	0.130	0.454	0.558	0.401	0.416	0.195	0.268	0.833

5.7 STRUCTURAL MODEL AND HYPOTHESES TESTING

In order to test the relationships between constructs as hypothesised in the proposed theory, the measurement model is transformed to a structural model by assigning the relationships between constructs based on theory (Hair *et al.*, 2010). The hypotheses are represented by the specified relationships among constructs. The structural model moves from the stage of specifying the relationship between the latent constructs and measured variables in the measurement model to an advanced level; at which the nature and strength of the relationships between constructs are determined (Hair *et al.*, 2010). In other words, it moves from using CFA to the use of SEM to test the hypotheses.

The first step in model testing is to estimate the goodness-of-fit of the research model. The similar set of fit indices used to examine the measurement model will be used to examine the structural model: the ratio of Chi square (χ^2) to degrees-of-freedom (df), (GFI), (AGFI), (TLI), (IFI), (CFI), and (RMSEA). As shown in Table 5.47, All of the fit indexes indicate that the structural model has a good fit: Chi-square/d.f. (≤ 3.0) = 2.086, GFI (≥ 0.90) = 0.900, AGFI (≥ 0.80) = 0.800, IFI (≥ 0.90) = 0.932, TLI (≥ 0.90) = 0.925, RMSEA (≤ 0.08) = 0.046, CFI (≥ 0.90) = 0.931. Table 5.48 shows the fit indices for both measurement and structural models.

Table 5.47 Overall fit indices of structural model

Model	RMSEA	CMIN/DF	GFI	AGFI	CFI	TLI	IFI
Default M	.040	1.246	.980	.961	.993	.989	.993
Saturated M			1.000		1.000		1.000
Independence M	.393	111.473	.318	.166	.000	.000	.000

Table 5.48 Fit indices for measurement and structural models

Fit indices	Recommended Value	Measurement M	Structural M
χ^2/df	≤ 3.00	1.246	2.086
GFI	≥ 0.90	0.980	0.900
AGFI	≥ 0.80	0.961	0.800
TLI	≥ 0.90	0.989	0.925
CFI	≥ 0.90	0.993	0.931
IFI	≥ 0.90	0.993	0.932
RMSEA	≤ 0.08	0.040	0.046

The second step in model estimation is to examine the path significance of each hypothesized association in the research model and variance explained (R^2) by each path. The parameter

estimates were used to produce the estimated population covariance matrix for the structural model. The model was defined by 77 measurement items that identified the eleven latent constructs. The covariance matrix among the constructs was applied to test the model. When the critical ratios (CRs or t-value) is higher than 1.96 for an estimate (regression weight), then the parameter coefficient value is statistically significant at the .05 levels (Hair et. al. 2010). Critical ratios or t-value was obtained by dividing the regression weight estimate by the estimate of its standard error (S.E). Using the path estimates and CRs values, thirty causal paths were examined in this study. For twenty four causal paths estimates t-values were above the 1.96 critical values at ($p \leq .05$). The t-values for remaining six constructs were found statically not significant. The overall structural model is depicted in Figure 5.33, and parameter estimates are presented in Table 5.50. It is to be noted that the measurement items and error terms associated with latent constructs are not shown for clarity.

Results presented in Table 5.50 indicate that twenty four of thirty hypothesized paths between independent and dependent variables were significant. For instance, the hypothesised path between perceived ease of use and perceived usefulness with CR value of 14.885 (>1.96) was statistically significant ($p < 0.001$). Similarly, paths between perceived usefulness and attitude; perceived ease of use and attitude; trust government and attitude; perceived risk and trust government; capacity and perceived behavioural control; availability and perceived behavioural control; interpersonal influence and subjective norm; attitude and behaviour intention; perceived behavioural control and behaviour intention; subjective norm and behaviour intention; social gratification and continuity; satisfaction and continuity; process gratification and continuity were statistically significant at ($p < 0.001$). The hypothesized paths between accessibility and use; media influence and subjective norm; content gratification and satisfaction; process gratification and use; process gratification and satisfaction; behaviour intention and use; use and satisfaction; use and continuity; content gratification and continuity were statistically significant at $p = < .05$. The hypothesized paths between perceived risk and attitude; trust internet and attitude; accessibility and perceived behaviour control; content gratification and use; social gratification and use indicated that their t-values did not exceed the cut-off point required for statistical significance. Thus, these paths were not statistically significant.

Table 5.49 Path loadings and critical ratios within constructs in the structural model

(***= significance at the 0.001 level, **= significance at the 0.01 level and *= significance at the 0.05 level)

Hypothesis	Standard Error (SE)	Critical ratios	P value	Finding
H1 Perceived usefulness → attitude	.044	5.512	***	Supported
H2 Perceived ease of use → attitude	.050	5.601	***	Supported
H3 Perceived ease of use → perceived usefulness	.051	14.885	***	Supported
H4 Trust government → attitude	.032	3.379	***	Supported
H5a Perceived risk → attitude	.034	1.123	.262	Rejected
H5b Perceived risk → trust e-government	.070	4.174	***	Supported
H6a Trust Internet → Trust e-government	.050	20.955	***	Supported
H6b Trust Internet → attitude	.093	.760	.447	Rejected
H7a Accessibility → perceived behaviour control	.060	1.271	.204	Rejected
H7c Affordability → perceived behaviour control	.28	1.526	.0252	Rejected
H7b Accessibility → Use	.042	2.426	.015	Supported
H8 Capacity → perceived behaviour control	.083	4.617	***	Supported
H9 Availability → perceived behaviour control	.144	4.056	***	Supported
H10 Media influence → subjective norms	.074	2.321	.020	Supported
H11 Interpersonal influence → subjective norms	.083	8.903	***	Supported
H12 Attitude → behaviour intention	.082	8.265	***	Supported
H13 Perceived behavioural control → behaviour intention	.097	5.682	***	Supported
H14 Subjective norms → behaviour intention	.036	4.929	***	Supported
H15a Content gratifications → Use	0.29	1.697	.090	Rejected
H15b Content gratifications → Satisfaction	.044	3.282	.001	Supported
H15c Content gratifications → Continuity	1.223	2.874	.004	Supported
H16a Process gratifications → Use	.957	2.179	.029	Supported
H16b Process gratifications → Satisfaction	.643	2.996	.003	Supported
H16c Process gratifications → Continuity	1.256	3.889	***	Supported
H17a Social gratifications → Use	0.28	1.592	.111	Rejected
H17b Social gratifications → Satisfaction	.027	.612	.540	Rejected
H17c Social gratifications → Continuity	.022	3.309	***	Supported
H18 Behaviour intention → Use	.036	2.919	.004	Supported
H19a Use → Satisfaction	.076	2.652	.008	Supported
H19b Use → Continuity	.076	3.053	.002	Supported
H20 Satisfaction → Continuity	.069	6.592	***	Supported

5.8 CHAPTER SUMMARY

The chapter presented the finding obtained from the data analysis of the survey that was conducted in order to examine the factors influencing e-Inclusion in the context of e-government adoption and usage. The findings have been presented using different sections. The first three sections presented response rate, demographics details, and descriptive statistics to

assess the consistency and accuracy of a research being carried out and to confirm whether it is worth proceeding with factor analysis.

Structural equation modelling (SEM) using AMOS version 20.0 was chosen to test the measurement and structural model in this study. The SEM analysis was performed in two stages. In the first stage, confirmatory factor analysis (CFA) was conducted on all the variables to check whether all items load significantly on their hypothesised variable, and whether they provide a more satisfactory account of the model fit. Then CFA was employed to assess the fit of measurement model. The results of the model revealed that goodness of fit indices were fit to the data. Each latent construct was then assessed for the reliability and validity. The assessment of these constructs indicated that all constructs were reliable. In addition, the construct validity was assessed using convergent and discriminate validity. The measurement model is then transferred to the structural model for hypotheses testing

Thereafter, structural model was assessed to test the hypothesised relationships between latent constructs. Twenty four hypotheses (i.e. H1, H2, H2, H4, H5b, H6a, H6b, H7b, H8, H9, H10, H11, H12, H13, H14, H15b, H15c, H16a, H16b, H16c, H17c, H18, H19a, H19b, and H20) represented as causal paths were used to test the relationships between these latent constructs. Both the goodness of fit indices and parameter estimates coefficients were examined to check whether the hypothesised structural model fitted the data and to test the hypotheses. The fit indices indicated that the hypothesised structural model provided the good fit to the data. However, six hypotheses (i.e. H5a, H6B, H7a, H15a, H17a and H17b) out of thirty were statistically not significant and thereby they were rejected. The significance of the findings is discussed in the next chapter.

CHAPTER 6: DISCUSSION

CHAPTER SIX: DISCUSSION

6.1 INTRODUCTION

In the previous chapter the conceptual model proposed in this study was empirically tested. The results from the empirical analysis define the set of significant predictors for citizens' behaviour intention and actual behaviour toward use of e-government. By using structural equation modelling a final revised model is provided showing the significant links between constructs. The aim of this chapter is to present a discussion of the results and the significance of the findings by discussing the significant and insignificant relationships in the proposed model through which the research hypotheses were accepted or rejected. The chapter starts with an overview of this research. It then presents discussion on the key findings of this study; the descriptive statistical findings, instrument validation, and the hypothesised relationships findings. The last section of summarises the overall chapter.

6.2 OVERVIEW OF THIS RESEARCH

The purpose of this research was to determine factors influencing e-Inclusion by examining citizens' acceptance and use of advance Internet activities, in particular e government. This thesis developed and empirically tested a hypothesised model for understanding the factors that influence citizens' intention to use e-government. In this background, the main objectives of the research included identifying factors that influence citizens' e-Inclusion in the context of e-government, developing a model of factors influencing citizens' e-Inclusion in the context of e-government, and testing the hypothesised model for validating it by exploring relationships between studied factors. As described in Chapter Three, the research model in the present study proposed that citizens' use of advance Internet activities, e-government in particular, is affected by attitudinal beliefs, which included perceived ease of use (PEOU), perceived usefulness (PU), compatibility (COMP), perceived risk (PR), trust in Internet (TI), and trust in government (TG), normative beliefs, which included interpersonal influence (II), media influence (MI), and government influence (GI), control beliefs, which include accessibility (ACC), availability (AV), affordability (AFF), and capacity (CAP), and gratifications, which includes content gratifications (CG), process gratifications (PG), and social gratifications (SG). The relative importance of each of these factors in the prediction of the BI to use e-government was also evaluated.

In order to achieve the above mentioned research objectives, a detailed and organized literature review was conducted, which is already reported in Chapter Two. Different theories were compared and empirical research studies were reviewed. The literature suggested that combining

uses and gratifications theory with the decomposed theory of planned behaviour was the most appropriate for the present research. The U&G was chosen due to its efficiency in understanding consumers' motivations and concerns for using various media (in this research is the Internet) and the DTPB due to its enhanced descriptive power than other technology acceptance models such as, theory of reason action and TPB models. Moreover, DTPB provides a better gratifying explanation of adoption intention (Shin and Fang, 2004), a complete understanding of usage (Lau, 2004), and a complete understanding of adoption behaviour (Lau, 2007). Another reason is that the DTPB was developed especially for understanding information technology use (Taylor and Todd, 1995a).

This study employed a quantitative approach using a survey for collecting primary data. A questionnaire was developed from the published literature by adapting existing measurement scales reported by previous research studies. Prior to using questionnaire in the main survey, one pre-test and a pilot study were conducted. The purpose of pre-test and pilot study was to detect any errors and ambiguities in the measurement instrument in order to avoid confusions and misinterpretations. The scales were revised and modified where necessary. A final sample of 510 responses was used for data analysis. The data collected was then analysed using two statistical software tools i.e. SPSS and AMOS. The SPSS version 18.0 was used for the descriptive analysis and missing value analysis while the AMOS version 20.0 was used for structural equation modelling (SEM) analysis i.e. confirmatory factor analysis (CFA), testing model fit to the data and hypotheses testing. The descriptive analysis of the survey presented demographic profile of the sample and item analysis. Finally, the hypothesised relationships between the constructs were examined by structural equation modelling. A two steps stage approach was adopted in SEM. In the first stage, the measurement model, using CFA method, was tested to examine and assess the reliability and validity of the constructs used in the model. In the second stage, a hypothesised structural was assessed using the path analysis technique for testing the hypothesized causal relationships among the constructs proposed in the research model. The proposed research model was found to be valuable in explaining the citizens' behavioural use of e-government and adequately fit the data. The results of this study largely support the hypothesised relationships proposed in the model. The structural model was evaluated and a discussion of the findings is presented in more detail in the next section. It is to be noted that the discussion in this chapter is organised around hypotheses testing results and findings in respect to the proposed hypothesised research model. This is followed by the conclusions of this chapter.

6.3 INSTRUMENT VALIDATION

The validity of the research instrument should be insured before and after the final data collection in order to institute and exhibit rigour in the finding of the positivist research (Hair et al., 2010). The recommended validity to be examined in this research includes convergent validity, discriminant validity, and constructs confirmatory factor analysis. For this study, convergent validity was assessed by examining: 1) factor loadings, which relate significantly all indicators to their respective constructs; all the absolute values of critical ratios (C.R.) of all the indicators should be greater than 1.96, at the 0.05 level of significance, 2) standardized regression coefficients, which should be greater than 0.50, and 3) the average variance extracted (AVE), which reflects the overall amount of variance in the indicators accounted for by the latent construct (Hair *et al.*, 2010). Discriminant validity was assessed by comparing the squared correlation between two constructs with their respective average variance extracted (AVE). The average variance extracted (AVE) of both constructs should be greater than the squared correlation between the two constructs. The squared correlation for each pair of variables was compared with the variance estimates computed for each constructs (See table 5.46 in Chapter Five) and found that it follows the conditions of discriminant validity on the majority occasions. Finally, the Cronbach's alpha (α) for all the constructs were evaluated to see the internal consistency among the multiple-item constructs. The value obtained for Cronbach's alpha (α) of all the constructs were found more than 0.70 (See Table 5.23 in Chapter Five) indicating a strong reliability for all the constructs. Therefore, analysing all required validity tests, this research concludes that measurement model works satisfactorily and this suggests that measures of this study demonstrate an appropriate level of internal consistency.

6.4 HYPOTHESIS TESTING AND SIGNIFICANCE OF EMPIRICAL FINDINGS

Although the description and the discussion for each hypothesis of this research is provided in the next sub sections, this section provides a brief summary of the hypotheses proposed in section 3.5 in Chapter three. Thirty hypotheses were formulated to identify if the independent variables significantly described the dependent variables. Out of thirty hypotheses, six hypothesis was not supported by the data. However, further analysis of the model also indicated that the paths coefficient of perceived ease of use on perceived usefulness, and from trust in Internet on trust in e-government were found quite strong and positively significant at the level of $p < 0.001$.

The model explains 37% of the variance in e-government use. Variance in individual behavioural use of e-government was 37% entirely explained by attitudes, subjective norms, perceived behaviour controls, process gratifications. Adding the gratifications to the model and excluding

behaviour intention have increased the total variance explained for behavioural use toward e-government from 22% to 37%. Unlike TPB and DTPB, the behavioural use toward e-government can be effectively explicated by looking at relevant attitudes, subjective norms, perceived behaviour controls, and process gratifications.

Perceived usefulness, perceived ease of use, compatibility, and trust are seen to explain 68% of the variance of attitude. Interpersonal and external influences explain 70% of the variance of subjective norm. Capacity, accessibility, affordability, availability explain 63% of the variance of perceived behavioural control. Comparing the relative effects of each determinant on the dependent variables, behavioural use was separately explained by attitude (20%), subjective norm (.2%), perceived behaviour control (48%), and gratifications (82%).

In addition, regarding the variance of attitude, 29% was explained by perceived ease of use, separately; and 53% by perceived usefulness, 48% by trust in government, 40% by trust in Internet, .1% by risk, and 54% by compatibility. Regarding the variance of subjective norm interpersonal influence explained 68% of the variance; another 54% was explained by media influence. Furthermore, regarding the variance of perceived behavioural control, 67% was explained by capacity, 66% was explained by availability, 42% by accessibility, and 51% by affordability.

Finally, comparing the relative effects of each gratifications determinant on the dependent variables, behavioural use was separately explained by content gratifications (68%), process gratifications (53%), and social gratifications (20%). Table 6.3 indicates that 24 of the 30 hypotheses were significantly supported. However, six hypotheses (i.e. H5a, H6B, H7a, H15a, H17a and H17b) out of thirty were statistically not significant and thereby they were rejected.

The results indicate that the concepts of trust in Internet and perceived risk did not significantly affect attitudes towards behavioural use of e-government. In summary, perceived usefulness, perceived ease of use, trust in government, compatibility, external influence (media influence), interpersonal influence, capacity, accessibility, and gratifications are the main determinants of behavioural use toward e-government. Significant of the findings are discussed below by merging the findings from this research with practice in e-inclusion domain.

Table 6.1 Path loadings and critical ratios within constructs in the structural model

(****= significance at the 0.001 level, **= significance at the 0.01 level and *= significance at the 0.05 level)

	Hypothesis	Standard Error (SE)	Critical ratios	Standardized Regression Weights (β)	P value	Finding
H1	Perceived usefulness → attitude	.044	5.512	.31	***	Supported
H2	Perceived ease of use → attitude	.050	5.601	.30	***	Supported
H3	Perceived ease of use → perceived usefulness	.051	14.885	.66	***	Supported
H4	Trust government → attitude	.032	3.379	.34	***	Supported
H5a	Perceived risk → attitude	.034	1.123	.03	.262	Rejected
H5b	Perceived risk → trust e-government	.070	4.174	.004	***	Supported
H6a	Trust Internet → Trust e-government	.050	20.955	.92	***	Supported
H6b	Trust Internet → attitude	.093	.760	.08	.447	Rejected
H7a	Accessibility → perceived behaviour control	.060	1.271	.09	.204	Rejected
H7c	Affordability → perceived behaviour control	.28	1.526	.03	.0252	Rejected
H7b	Accessibility → Use	.042	2.426	.03	.015	Supported
H8	Capacity → perceived behaviour control	.083	4.617	.43	***	Supported
H9	Availability → perceived behaviour control	.144	4.056	.50	***	Supported
H10	Media influence → subjective norms	.074	2.321	.16	.020	Supported
H11	Interpersonal influence → subjective norms	.083	8.903	.67	***	Supported
H12	Attitude → behaviour intention	.082	8.265	.51	***	Supported
H13	Perceived behavioural control → behaviour intention	.097	5.682	.05	***	Supported
H14	Subjective norms → behaviour intention	.036	4.929	.18	***	Supported
H15a	Content gratifications → Use	.029	1.697	1.3	.090	Rejected
H15b	Content gratifications → Satisfaction	.044	3.282	1.1	.001	Supported
H15c	Content gratifications → Continuity	1.223	2.874	.66	.004	Supported
H16a	Process gratifications → Use	.957	2.179	.53	.029	Supported
H16b	Process gratifications → Satisfaction	.643	2.996	1.9	.003	Supported
H16c	Process gratifications → Continuity	1.256	3.889	.54	***	Supported
H17a	Social gratifications → Use	.28	1.592	.08	.111	Rejected
H17b	Social gratifications → Satisfaction	.027	.612	.09	.540	Rejected
H17c	Social gratifications → Continuity	.022	3.309	.01	***	Supported
H18	Behaviour intention → Use	.036	2.919	.18	.004	Supported
H19a	Use → Satisfaction	.076	2.652	.53	.008	Supported
H19b	Use → Continuity	.076	3.053	.50	.002	Supported
H20	Satisfaction → Continuity	.069	6.592	.50	***	Supported

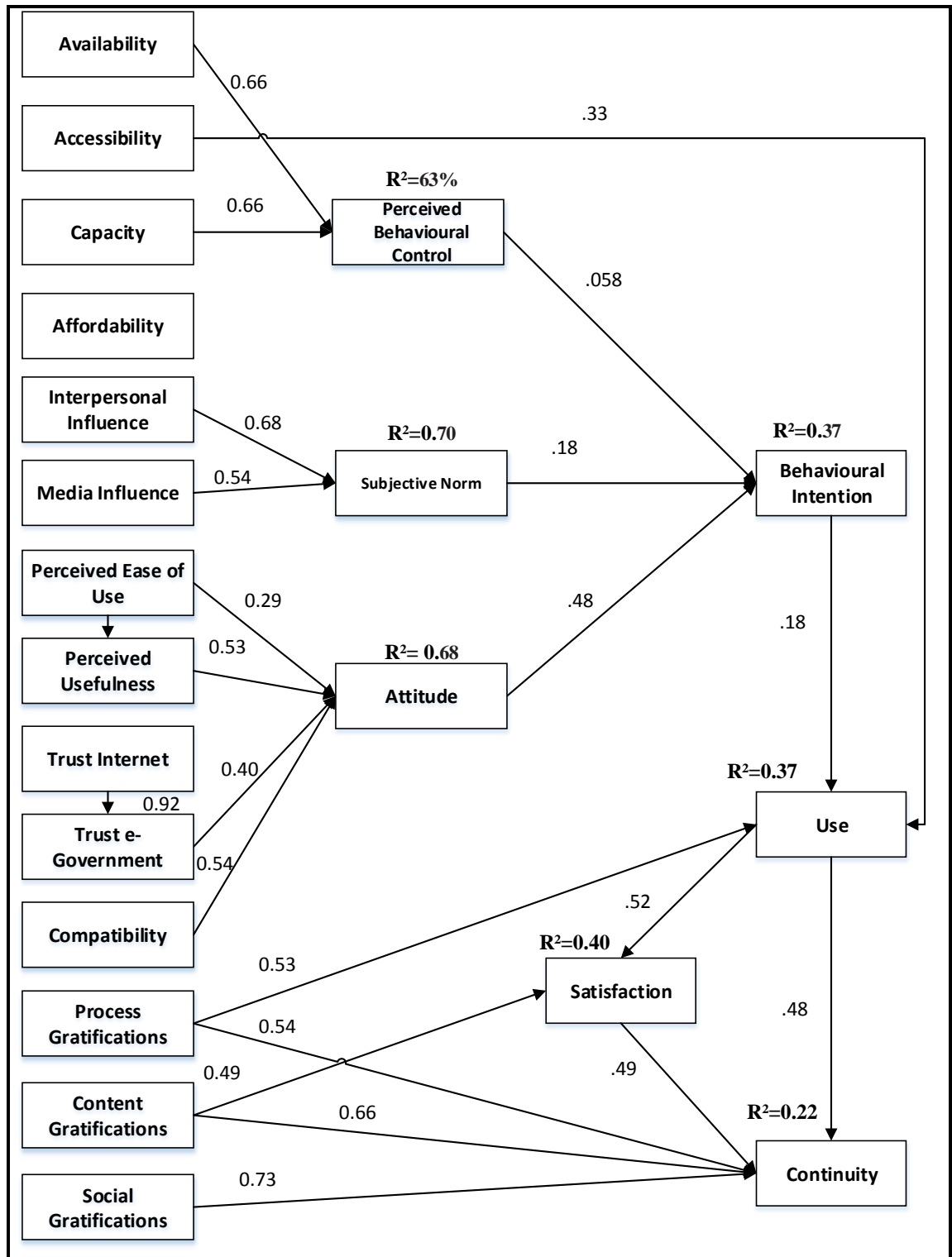


Figure 6.1 Structural Model with standardized paths coefficient (only significant paths are shown)

The concept of the digital divide was originally defined as a gap between those who have access to digital technologies and those who do not (National Telecommunications and Information Administration, 1998; Selwyn, 2004). A decade of digital divide research reveals that access is associated with age (Loges and Jung, 2001), gender (Wilson et al., 2003), education (Bucy, 2000), income (Rice and Haythornthwaite, 2006), ethnicity (Hoffman, Novak, and Scholsser, 2001; Jones et al., 2009), and geography (Hindman, 2000; Wei and Zhang, 2008a). This was a legitimate focus of inquiry in the early phases of Internet diffusion and contributed to our understanding of the digital inclusion research.

The results of participants' demographic revealed that only 3.2% more responses were obtained from the females (51.6%) in comparison to the male (48.4%). This difference in the ratio between the female and male categories therefore may explain the high percentage of female responses obtained in this survey. In addition, the finding suggests that there are no difference between male e-government users and female e-government users (See Figure 6.1). Moreover, several Internet access points were used differently by male and female. Females use the Internet more than males at home, public library, and college; whereas, males use the Internet more than females at work, Internet café, and community centre. This is consistent with previous studies where researchers suggested that young women, especially the more educated and those who work in certain jobs where Internet skills are necessary, have helped to close the gender gap (Ono and Zavodny, 2003; Wasserman and Richmond-Abbott, 2005). In the US, the gender gap seemed to have disappeared by 2000 (Ono and Zavodny, 2003; Wasserman and Richmond-Abbott, 2005; Warf, 2012). In the UK, Dutton and Blank (2011) suggest that gender divide no longer exist with respect to adoption of the Internet. This is consistent with the findings from this study in regard gender gap.

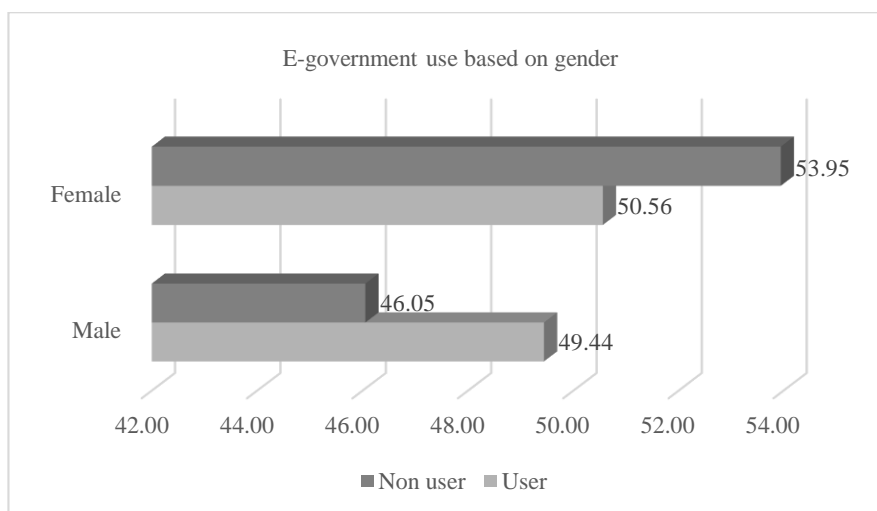


Figure 6.2 E-government use by gender

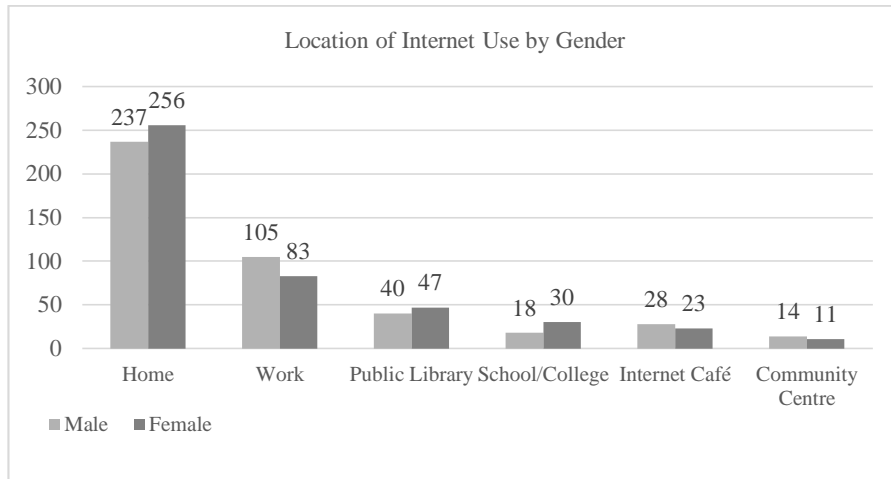


Figure 6.3 Location of Internet use by gender

In Chapter two (Section 2.3.5), Becker’s approach to identifying E-Inclusion gaps in the context of Germany was applied to the UK using secondary data (Eurostat and UK office for national statistics). The results indicate that both the UK and Germany share the same e-Inclusion gaps. Four e-Inclusion gaps were identified and the deepest gap is between e-commerce users and e-government users (See section 2.3.5).

The same approach was applied to the research data which was collected from citizens in different cities in the UK. The findings in the UK were consistent with the German results. Moreover, a new gap was identified between use of e-commerce and use of e-banking (See Figure 6.3) and this indicates and assures that e-government is the deepest gap among other Internet activities.

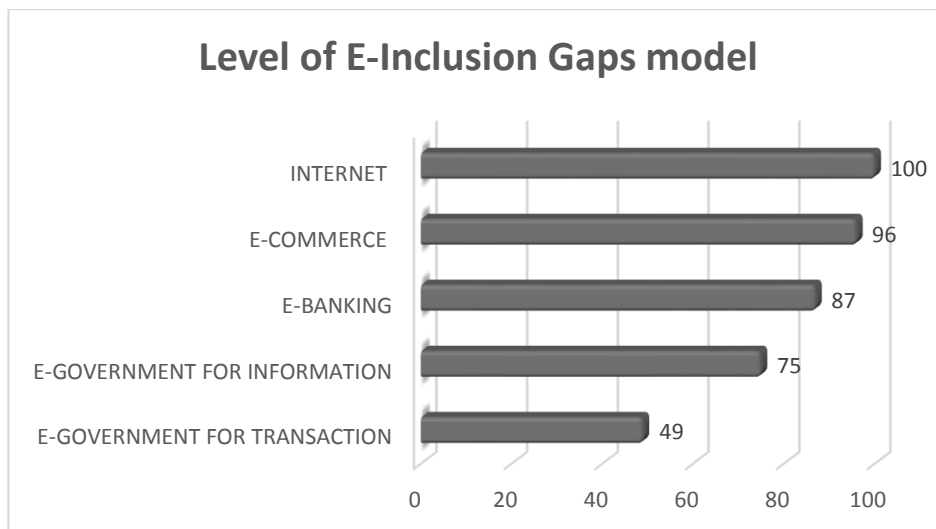


Figure 6.4 Level of e-Inclusion gaps model

Bearing in mind that all the respondents of this study are Internet users, the first gap that has been identified in the case of the UK and Germany (the gap between total population and Internet usage) cannot be identified on this data. Four levels of gaps have been identified in regard to citizen's usage of different Internet activities (See Figure 6.3):

Gap A (Internet usage – E-Commerce usage): the first gap in the figure is the gap between the Internet usage (Total respondents) and the e-commerce usage, 4 percent of the respondents who are already Internet users have never shopped online. The individuals in this gap fulfil the elementary requirement of having access to the internet. However they do not engage in Internet activities that involve transactions. The reasons may include; skills, trust in e-commerce, security concern, not interested in the services provided by e-commerce.

Gap B (E-commerce usage – E-banking usage): the second gap in the figure is the gap between e-commerce usage and e-banking usage. While 96 percent of the total respondents have used e-commerce only 87 percent of them have used it for e-banking. The individuals in this gap fulfil the requirement of having access to the internet, skills required to use transactional Internet activities, and have no trust issue either in the Internet as a medium or in e-commerce. However they do not engage in transactional Internet activities provided by the banking sector. The reasons may include; trust in e-banking websites, security concerns, awareness, and/or not interested in the services provided by e-banking.

Gap C (E-banking usage – E-government for information usage): the third gap in the figure is the gap between e-banking usage and e-government for information usage. While 87 percent of the total respondents have used e-banking only 75 percent used it for e-government services. The individuals in this gap fulfil the requirement of having access to the internet, skills required to use transaction Internet activities and engage in more complex actions, and have no trust issue either in the Internet as a medium or in the e-banking. However they do not use e-government services, not even for obtaining information. The reasons may include; trust in e-government website, security concern, awareness issue, not interested in the services provided by e-government, general preference for personal contact when performing government transactions or missing knowledge about the available E-Government information and services.

Gap D (E-government for information - E-government for transaction): the fourth gap in the figure is the gap between e-government for information usage and e-government for transaction usage. While 75 percent of the total respondents have used e-government for information only, 49 percent used e-government for transactions. Individuals belonging to this gap are aware of the presence of e-government as they use it as an information source. However, they do not use e-government for transactions. The reasons may include; trust in e-government website, security

concern, not interested in the transaction services provided by e-government, deficits in the implementation of e-government services or even the lack of transactional e-government services.

A conclusion can be drawn from the aforementioned discussion. E-government for transaction usage is the last level of e-Inclusion based on this approach, and finding the factors that determine and influence people to use e-government in general and e-government for transaction will help to address and better explain the factors that influence e-Inclusion and better explain possible inclusion gaps.

There are many reasons behind the above differences in using different Internet activities that need to be clarified and which this research aimed to explore. First, a clarification needs to be made in regards to the sample used for this research. The sample consists mainly from Internet users, this was purposely to help fulfil the aim of this research. 40 percent of the respondents come from age group 25-44 and the rest of the group is older than 44. Respondents come from different employment, 40 percent of them are full time employees, 20 percent each for other categories.

The respondents indicate that the main reason for not using e-government is security concerns (See figure 6.4). Security concerns came first as the main reason for not using e-government service among respondents, lack of skills come second followed by high cost and finally lack of access. The results revealed that the main reasons that prevent people from using e-government is security concern. This is related to trust in e-government issue and consistent with the findings in the next section. The path from trust in e-government to attitude toward using e-government is significance. The second reason for not using the e-government services is lack of skills. Moreover, the path from capacity to attitude toward using the e-government was highly significant. This indicates the importance of skills. From the e-Inclusion gap model, it is clear that the respondents are happy to adopt complex Internet activities that require skills and such as transaction services provided from business or banks. Moreover using these Internet activities require trust in these activities as transaction is involved. A conclusion can be drawn from the aforementioned findings that two main reasons for not using the e-government service are security concern and lack of skills. Moreover, people who are familiar with e-government services and their benefits are more likely to use e-government (See figure 6.4).

The finding reveals that the path between trust in Internet and attitude toward using e-government is not significant while the path from trust in e-government and the attitude toward using the e-government is significance. This indicates that one of the reasons that prevent participants from using e-government services is trust in government.

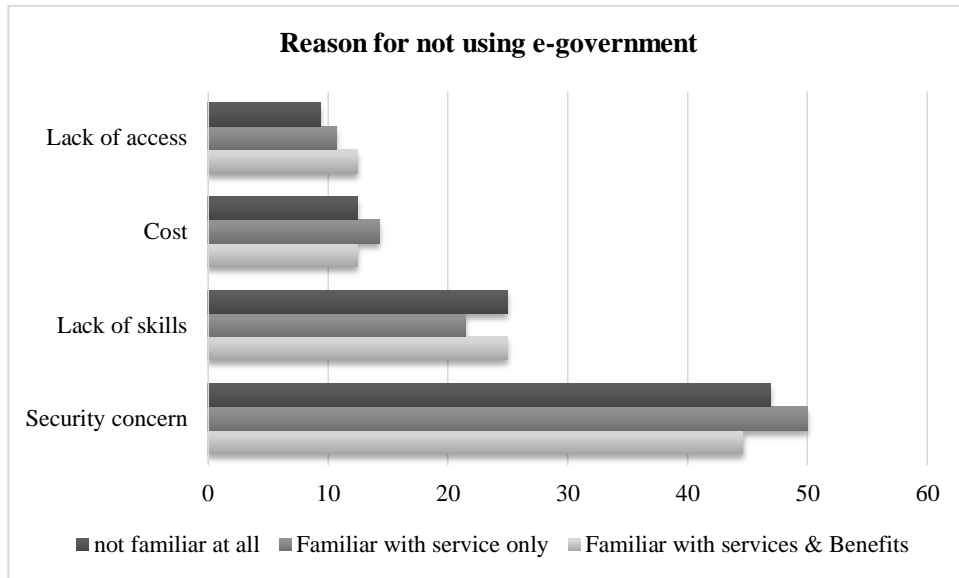


Figure 6.5 The Main reason for not using e-government

6.5 CHAPTER SUMMARY

This chapter discussed and reflected on the results obtained from Chapter five. First, this chapter presented an overview of the research. Second, the respondents' demographic characteristics were discussed and e-Inclusion gap model was presented and discussed based on the data collected for this study. Third, this research discussed the authenticity of the research instruments used for analysing the results. Fourth, the chapter presented a discussion of hypotheses presented through the conceptual model developed with the status of their significance and non-significance. In sum, the findings from this chapter and previous chapters bring to light some important contributions that add to the existing body of knowledge. The specific contributions and implications of the study are presented in the next Chapter (Chapter Seven).

CHAPTER 7: CONCLUSION

CHAPTER SEVEN: CONCLUSION

7.1 INTRODUCTION

The previous chapter provides the reflection and detailed discussion on the results analysed for this study in chapter Five. This chapter provides conclusions of the results and discussions presented in the prior chapters. The chapter begins by revisiting research gaps and presenting the theoretical contributions followed by implications for policy and practice. Then, the major limitations encountered in this research are presented followed by the directions for future research. Then, this chapter revisits the aim and objectives of this study. Finally, the last section presents concluding remarks of the chapter.

7.2 REVISITING RESEARCH GAPS

This study was designed to help address six significant research gaps, as identified in Chapter Three, these will be used as the focal point, for assessing where significant new contributions to the existing body of the literature, might be found. Consequently, the initial discussion of contributions to the literature will be structured around these research gaps, as presented in the following six subsections.

7.2.1 Research Gap 1: E-inclusion as an emerging field

Reviewing an emerging field with poorly defined boundaries and research styles such as 'e-Inclusion' poses special problems including both the selection of literature and the selection of an analysis model.

This research contributes to the knowledge in e-Inclusion research. Due to the limited normative sources available, secondary policy documents on e-Inclusion were used to overcome the lack of literature on e-Inclusion (See Table 6 for examples of e-Inclusion white papers and reports). An extended mapping of the literature using the information systems databases and secondary policy documents was conducted. This phase allowed to identify the most dominant and common explanations in relation to e-Inclusion. The author presented a review of the literature pertaining to the contextual aspects of e-Inclusion, the origin of e-Inclusion, the benefits of e-Inclusion, European strategies to promote e-Inclusion, e-Inclusion in the UK, theories and models that are relevant to e-Inclusion, and finally e-Inclusion taxonomies.

Table 7.1 Examples of e-Inclusion white papers and reports used in this research

Year	Title	Author
2003	Monitoring the digital divide and beyond	Goerge Sciadas - Orbicom International Secretariat
2004	Technology and Social Inclusion: Rethinking the Digital Divide	Mark Warschauer - MIT Press
2005	e-Inclusion: New challenges and policy recommendations	Daniel Kaplan - eEurope Advisory Group
2005	Inclusion Through Innovation: Tackling Social Exclusion Through New Technologies	Office of the Deputy Prime Minister - Office of the Deputy Prime Minister
2005	From E-government to E-inclusion	United Nations publication
2007	Beyond the digital divide: Rethinking digital inclusion for the 21st century	Neil Selwyn and Keri Facer - Futurelab
2007	Gradations in digital inclusion: children, young people and the digital divide	Sonia Livingstone and Ellen Helsper - New media & society
2007	e-Inclusion in the Information Society	Elisa Mancinelli - Information Society: From Theory to Political Practice: Course book
2007	Inclusive e-Government: survey of status and baseline activities	Jeremy Millard - <i>Inclusive eGovernment Expert Group</i>
2007	Benchmarking Digital Inclusion	A White Paper by gov3 limited
2007	Delivering e-Inclusion: The role of digital literacy	ECDL Foundation
2007	E-inclusion: Learning Difficulties and Digital Technologies	Chris Abbott - Futurelab
2007	The Digital Inclusion Landscape in England	Digital Inclusion Team
2007	Understanding digital inclusion - A research summary	Fresh Mind - UK online centres
2007	Status of e-Inclusion measurement, analysis and approaches for improvement	Joe Cullen Kari Hadjivassiliou Kerstin Junge Thomas Fischer
2008	Community Perspectives on Digital Inclusion, Qualitative Research to Support the Development of the Digital Inclusion Strategy	Department for Communities and Local Government
2008	Delivering Digital Inclusion: An Action Plan for Consultation	Communities and Local Government Publications
2008	Digital Inclusion: An Analysis of Social: Disadvantage and the Information Society	Ellen J. Helsper
2008	Economic benefits of digital inclusion: building the evidence	UK online centres
2008	Comparative Study of Public e-service centres in Europe	campaign of the European Commission
2009	Champion for Digital Inclusion: The Economic Case for Digital Inclusion	Government and Public Sector - PricewaterhouseCoopers LLP
2009	Digital Inclusion	Jane Seale - London Knowledge Lab
2010	A composite index to measure digital inclusion in Europe	Bentivegna, S. and Guerrieri, P. - EC
2010	Delivering Digital Inclusion: A Strategic Framework for Wales	Welsh Assembly Government
2010	Digital Scotland: an interim report for consultation	The Royal Society of Edinburgh
2011	The Challenge of Inclusive e-Government	Bradbrook, G. - EC
2011	Social Housing Providers': Digital Inclusion Strategy Group	Digital Inclusion Strategy Group
2012	Measuring the Impact of e-Inclusion Actors	Gianluca Misuraca, Cristina Torrecillas and Clara Centeno - EC
2012	Building digital communities , A framework for action	Institute of Museum and Library Services,
2014	Digital volunteering: Using ICT for social action	Digital Volunteer Programme Management Unit, Galicia - EC
2014	Measuring the Impact of e-Inclusion Intermediary Actors	Cristina Torrecillas, Clara Centeno, Gianluca Misuraca - EC

7.2.2 Research Gap 2: The theory gap in e-Inclusion

Despite a growing literature on e-Inclusion, limited research has been conducted to fully comprehend e-Inclusion.

This research gap was filled by developing an e-inclusion taxonomy. Drawing from the literature, secondary policy documents, and key findings from the UK context, six dimensions have been identified as key inhibitors for e-Inclusion namely; demographical, economic, social, cultural, political, and infrastructural dimensions. These dimensions that influence citizens e-Inclusion were synthesized and conceptualized offering taxonomy of factors influencing e-inclusion from theory and practice perspectives (See Table 2.7). The findings from the literature were crucial for understanding and shaping the research scope of e-Inclusion which at the same time, has been instrumental for developing the e-Inclusion taxonomy, building the research model, presenting a set of hypotheses and create the survey of e-Inclusion used in this study.

7.2.3 Research Gap 3: Lack of e-Inclusion frameworks

There are a few relevant frameworks for e-Inclusion and they tend to be less applicable for explaining the complexity of e-Inclusion.

The main focus of this research was on extending the current boundaries of knowledge in the area of e-Inclusion. It was found that the lack of conceptual definitions and theoretical frameworks for e-Inclusion has prevented the development of reliable measurement and identification of specific factors that influence e-Inclusion. To this end, it is hoped that the developed taxonomy (See chapter two) offers greater elaboration and refinement of the variables that can be used to assess e-Inclusion and will thus contribute towards addressing these gaps in the literature and current e-Inclusion research. In order to assist selection of an appropriate model and constructs for current research, the theories that are used in e-government adoption research and e-Inclusion research were discussed with their focus, description and limitations earlier in chapter two. Based on this a research model was developed to capture and examine the e-Inclusion factors that influence citizens' use of e-government services based on the Decomposed Theory of Planned Behaviour (DTPB) and Uses and Gratifications Theory (U&G). These two theories were chosen because of their appropriateness for e-Inclusion research; the critical factors that influence e-inclusion and was identified in the taxonomy can be covered by (DTPB) constructs while the individual's gratifications that determine using specific Internet activities is covered by (U&G) (See Figure 3.2).

7.2.4 Research Gap 4: The practise gap in e-Inclusion

Despite the great interest in e-Inclusion policies and initiatives all across Europe, e-Inclusion is still lacking and widening in some countries.

This research was undertaken in the UK. Despite large investments by successive governments in digital inclusion policies and initiatives since the late 1990s, the impact and public value of digital government services as well as the broader use of ICT to transform traditional public service has never been systematically evaluated or quantified in the UK. Although successive governments have introduced league tables and other evaluation methods to identify and support good practice, the measures and methods used have often been subjective. In this context, this research used established theoretical norms to develop a conceptual basis and applied this in practice to better understand the various dimensions of e-inclusion. A study have conducted on Internet usage in Norway, Sweden, Austria, the UK, and Spain (Well developed European countries with high GDP), with a sample of 12666, to better understand the e-Inclusion by identifying the variety of ways in which people in Europe use the Internet. An alarming finding that 60% of the population was found to be either non-users or sporadic users. This situation indicates that the e-Inclusion is still a large scale problem in Europe (Brandtzæg et al., 2011).

7.2.5 Research Gap 5: The theory-practise gap in e-Inclusion

There are gaps between the Internet activities used by citizens. Citizens who used e-commerce and e-banking have the qualification necessary to engage in more complex actions and also they do not have trust issues with the internet. However they do not participate in e-government.

This study has overcome research gaps four and five in two stages. Firstly, by connecting the e-Inclusion factors identified from the literature to key findings from the UK context. Secondly, by analysing the Internet activities use in the UK in the past four years (See Table 2.5), and identifying existence gaps in the Internet activities used by the citizens in the UK. Four gaps were found between the uses of Internet activities by citizens in the UK (See Figure 2.2). The use of e-government was the deepest gap that exists in the Internet activities used by the citizens (Figure 2.2). The author suggested that finding out the factors that prevent and stop people from using e-government will help to enhance our understanding of the critical factors that influence e-Inclusion and why people keep using other Internet activities that required qualification and trust to engage in advance online actions, but they do not use e-

government services. Therefore, the author concludes that e-government use is the last level of e-Inclusion and finding the factors that determine and influence people to use e-government will help to understand the factors that influence e-Inclusion and better explain possible inclusion gaps.

7.2.6 Research Gap 6: Lack of e-Inclusion research in published e-government research

Although the parallel between e-government and e-Inclusion research are critically important, there are relatively few explicit examples of e-Inclusion research findings in published e-government research and vice versa.

This study attempted to explore the theoretical and practical intersections of e-Inclusion and e-adoption (Particularly e-government) and to show how they complement and possibly enrich the potential of e-Inclusion research. This study can help to understand the complex and recursive relationships between e-Inclusion and e-government. For practice, it can help to create a more comprehensive strategy that takes into consideration the alignment of e-government initiatives and e-inclusion policies such as access and identification of individual needs.

7.3 THEORETICAL CONTRIBUTIONS

In this research, it has been possible to highlight a number of important contributions, to the existing literatures. The main contribution of this research is developing a model specifically for e-Inclusion. The proposed model employs gratifications, subjective norms, facilitating conditions, and attitude as predictors of behavioural intention which is a predictor for use. We argue that each of these three determinants play different roles in predicting each of the three conceptualizations of system use. We test the proposed model in the context of a longitudinal field study of 321 users

First, this research combined U&G with DTPB to examine the factors that influence e-Inclusion in the context of e-government. The success of the incorporation of the gratifications, trust, risk and external factors (i.e. self-efficacy, accessibility, availability, affordability) in the DTPB model is evident from the empirical results. The results suggest that the proposed model of e-Inclusion demonstrates a considerable explanatory and predictive power. Thus, the integration of the U&G and DTPB is both theoretically appealing as well empirically significant. Moreover, The U&G differs from the technology acceptance

models because it posits that motivational variables directly influence behavioural usage without the mediation effects of attitude or behavioural intention. This provides another frame of reference to look at the acceptance and usage of IT from purely motivational perspectives.

Second, the e-Inclusion model developed in this study can be employed for explaining other online domains such as online-shopping or electronic commerce. This research has identified important factors from the extant literature on various online domains. Therefore, the comprehensive and parsimonious model developed for this research makes important contribution to the literature to both e-Inclusion and e-government domains.

Third, the data for the present empirical study was collected using a self-administered and group-administrated method. Using this method gives advantage of achieving a good response rate. In addition, structural equation modelling (SEM) using the AMOS statistical package was used to test the measurement and structural models. Use of this methodology employing sophisticated statistical tools has been limited in previous literature; thus, this study sets a new pattern in the research on e-Inclusion.

This study adopted a quantitative approach and one of the main advantages of a quantitative approach is precisely the possibility of making comparisons and enabling generalisations. The possibility of scientific generalisation from the samples used in analysis to a broader population is an advantage of the quantitative approach (Creswell, 2008; Bryman, 2004). Moreover, based on the research setting, specific characteristics, and the type of this study, it may be possible to generalise beyond the specific context. The empirical evidence and findings of this study are appropriate to the scope of the Internet adopters in the UK. A generalisation to most other European countries is also possible as these countries share the same political and economic structures. However, any generalisations to other countries should be done with caution due to structural, cultural, social, political or economic differences, between populations.

7.4 IMPLICATIONS FOR POLICY AND PRACTICE

For practitioners, particularly policymakers, this study has important implications especially when E-inclusion has become a ‘must’ in the policy initiatives and actions carried out by European Member States, and by all social actors (collective and individual, public and private).

This study has important implication. The findings here challenge assumptions guiding typical ICT policy formulation that technology access alone is enough and provide actionable recommendations for addressing e-Inclusion. The findings in this study suggest that policymakers should acknowledge the complexity and dynamics of the phenomenon, discard the idea that e-Inclusion is simply a technology access problem and instead focus on disparities in forms of capital for ICT, recognize the key aspects of the behavioural models that characterize potential adopters' and adopters' Behavioural intention; and design policy interventions to address identified gaps in capital and to leverage each form of capital to trigger initial and continued use of ICT.

From the research findings; the UK government does not have influence on people decision to use e-government services and 76% of non e-government user are not familiar with the services provided by the government and the benefits from using these services. Trust in the Internet as a medium is not an issue anymore, while trust in e-government play a basic role to decide using the e-government. In another word, citizens trust the Internet for example to shop online and use e-banking services but they do not trust the e-government website which prevent them from using the e-government services. Therefore, access is not an issue anymore, and the government should build its policies beyond access divide.

From a practical perspective, the study has empirically investigated the impact of e-Inclusion factors and concluded their potential impact on citizens' engagements with e-government services. The results offer policy makers and practitioners a better overview of the broader dimensions of e-Inclusion as well as the most critical factors that prevent people from being part of the information society (Trust in e-government, process gratifications, and perceived ease of use, media influence, interpersonal influence, and capacity). To ensure citizens use the e-government service, it is important to give attention to the process gratifications, to ensure satisfaction of citizens, attention should be given to the content gratifications, and to ensure continuity of use, both content and social gratifications should give the attention. Finally, from an infrastructural dimension, it is imperative for policy makers to ensure the availability and affordability of electronic-government services by utilizing multiple channels (e.g., mobile phones, televisions, kiosks) to accommodate the diverse needs of citizens. It is hoped that these findings will help policy makers to define new policies that meet both users and non-users' needs when faced with the task of deciding the delivery of e-government services to their communities.

Policy-makers should aim for the creation of equality of opportunity instead of equality of outcomes (Helsper, 2007). Therefore, public policies must encompass all segments and all categories of population.

Despite the interest in e-Inclusion in Europe at the moment and the many different e-Inclusion projects, a shift need to be done to focus more on the effectiveness of these projects and to questions about ‘why?’ and ‘for whom?’ digital inclusion policy initiatives are implemented rather than the quantity of these projects. Moreover, policy and implementation need to refocus from access to meaningful engagement and tangible, social outcomes of ICT use by embedding e-Inclusion into a number of different policy and regulation areas. This will make evaluation of the actual achievements of the policies at a national level more transparent but more difficult to implement.

The government should aim to equally provide opportunities to improve citizens’ skills, motivation and engagement in different opportunities available on digital platforms. This should go beyond getting people online only (For example, Race online Campaign 2012, the main aim of this campaign was to get the 20% of the people that have never used the Internet in the UK online). The reasons behind digital exclusion (what stops people from using the Internet in general and e-government in particular) have changed over time, looking at these reasons (See Table 7.1) will guide the government and will help in facilitating required policies to enhance e-Inclusion.

Table 7.2 The reasons behind digital exclusion by non-Internet users in the UK

	2005	2007	2009	2011	2013
No Interest	44%	52%	61%	62%	82%
No Skills	56%	64%	11%	8%	7%
No Access	63%	77%	7%	6%	3%
Cost	50%	51%	7%	7%	5%

(Source: Oxford Internet Survey Data, 2005-2013)

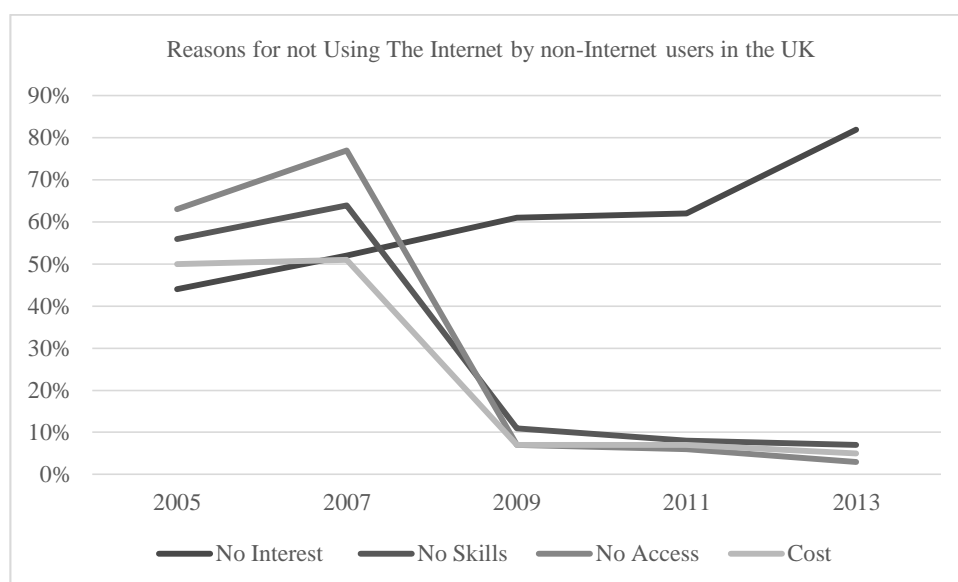


Figure 7.1 The reasons for not using the Internet by non-Internet users in the UK

Figure 7.1 shows that while in 2005 only 44% of the non-users indicated lack of interest as a reason for not being online, in 2013 disinterest was a reason for 82% of non-users. Therefore, the government should consider the main reasons that prevent people from using the Internet (*'No interest'*) which is increasing every year and find innovative ways to tackle the widening digital exclusion gap. The main argument that this research was built on, is the need to include gratifications in the e-Inclusion model. The reason behind this is: firstly, dis-motivation is the main reason that prevents non-Internet users from using the Internet. Secondly, the reason behind why e-government is not used by those people who are Internet users and use advance Internet activities such as e-shopping and e-banking were made clearer in this study (See Figure 6.3). This study concludes that focusing on the factors that determine and influence people to use e-government will help to understand the factors that influence e-Inclusion and better explain possible inclusion gaps.

Simultaneously, lack of access to online services has dropped from 63% in 2005 to 3% in 2013. This is consistent with the research finding that indicates the insignificance of access. This indicates that policies that have been followed in regard access divide were successful and the government need to shift its focus and policies toward initiatives that enhancing citizens' ICT skills and decrease the cost of being online. While lack of access was the main reason in 2005 for not being online, compound reasons are giving for being excluded in recent years which indicates the complexity of digital exclusion. To conclude, policies and interventions that might have been able to motivate people in 2005 by offering free computer use and free digital skills classes in libraries or community centres are less effective in 2013

since this offer is now less likely to be enough to motivate those who are excluded to engage with ICTs. Since this is the case, the government policy 'digital by default' is likely to be costly both in economic and social terms. Not only are the disadvantage groups that will be excluded from taking full advantage of the range of opportunities available online, but also the unmotivated and unskilled people.

Policies and initiatives that take digital by default as a starting point are in danger of ignoring the complexity of the field. Worse, they lead to a real danger that a large part of the population will become digitally excluded by default. In this respect, aspects of inclusion other than infrastructure and skills should be built into digital inclusion policies

UK digital policy previously involved much more government involvement. It included policies and initiatives geared towards guaranteeing infrastructure for all and improving opportunities for digital participation. Key policies and research were situated within several government departments (e.g. The Cabinet Office, BIS, and the regulator Ofcom). Currently, the most obvious involvement from government is in promoting superfast broadband on the existing infrastructures through the Department of Culture, Media and Sport and acquisition of employment related digital skills through the Department of Business, Innovations and Skills. This means policy has been situated outside the social, educational, cultural and political sphere and is therefore not able to address the motivational and socio-cultural factors that so strongly predict engagement with ICTs.

Assumption is given at the beginning of this research that e-government may be able to facilitate greater citizen-participation in government (Shelley et al., 2006) and that e-government and e-Inclusion should be seen as complementary social phenomena. Few explicit intersections can be found in these two areas and research and practice seem to be disjointed between e-government and e-Inclusion. A more integrative approach can help to understand the complex and recursive relationships between them. For practice, this new understanding has the potential to create a more comprehensive strategy that takes into consideration the alignment of e-government initiatives and e-Inclusion policies. The conceptualisations of the e-Inclusion and e-government have important implications for policymakers. The effectiveness of policies implemented will depend -to some extent- on the accuracy of the models adopted by public managers. Policies should aim at reducing the digital exclusion and consider the specific type of gap they are aiming to bridge and the multiple perspectives of the people being served by government (see Ferro et al., 2005; Mossberger et al., 2006). Moreover, in order to understand the specificities of the divide

present in an area in which e-government initiatives will be implemented, preliminary studies should be conducted. A more comprehensive view of e-government policies can potentially increase the expected positive impacts of electronic government in society.

7.5 RESEARCH LIMITATIONS

Although the findings of this study are encouraging and useful the author acknowledges that this research has limitations, and therefore the conclusions drawn should be interpreted as such. The empirical conclusions in this study are drawn from a sample of 510 surveys. The author acknowledges the fact that this sample may not be fully representative, as e-Inclusion should consider a wide range of citizens such as those often excluded from society due to social, economic, or physical reasons. Nevertheless, the research approach taken was purposeful for this study, as the key empirical objective was to evaluate the conceptual taxonomy and associated factors among a sample of citizens who were knowledgeable with ICT and e-government services, and to explain the adoption gaps in using different Internet activities by citizens, specifically the gap between using the e-government services and other Internet activities. Moreover, the demographic analysis indicates that the above e-Inclusion criteria are realistically covered within the survey sample used.

The research possesses the following limitations:

- 1 A systematic literature review was not taken in this research, and instead traditional narrative literature review approach was conducted. The process in the adopted approach was to critiques and summarizes literature, draws conclusions about the topic, and identifies gaps or inconsistencies in a body of knowledge. The systematic review is more rigorous and well-defined approach, comprehensive, may include both published and unpublished studies relating to a particular area, details the time frame within which the literature was selected, and details the methods used to evaluate and synthesize findings of the studies in question.
- 2 .A non-probability based convenient sampling method was used to collect the data for this study across cities in the UK.
- 3 The research selected to get response only from Internet users. The majority of respondents were well educated, computer and Internet literate, and possessed a good hands-on experience of computer and Internet technologies.
- 4 This research has focused only on the quantitative approach to data collection and analysis and this might have restricted the ability of the research to obtain an in-depth

view of citizens to explore more on e-Inclusion and the use of e-government services. However, given the time and resource constraints, more in-depth research using both quantitative as well as qualitative approach could not be conducted within the confines of a focused PhD study.

- 5 The data for this research was gathered largely through a self-administrated and group-administrated questionnaire. The group-administrated approach generally consists of the people from the same social and/or professional class and restricts the diversity of the respondents chosen to represent the wide array of society.
- 6 The impact of different moderating variables including age, gender, and experience were not used to examine the research model proposed in this study. .
- 7 The proposed model has been tested only through the data collected in the UK context.
- 8 Three dimensions of gratifications that was developed - specifically for the Internet – in previous studies were used in this research.

The limitations outlined in this sub-section elevate a number of avenues for further inquiries. However, they did not hinder or significantly influence the outcomes of the study.

7.6 FUTURE RESEARCH

In light of the limitations experienced in the course of undertaking this research, the researcher is suggesting that the following points be considered in future research:

1. It has been argued that probability sampling is the best suited sampling technique while generalizability of the results is of paramount importance in the research (Bhattacharjee, 2012). A future research can consider the probability sampling technique for collecting the data, which suggests that every unit in the population will have some probability (non-zero probability) of being selected in the sample (Bhattacharjee, 2012).
2. Future research should focus on collecting data largely through using web-based and postal surveys. Such research methods will ensure that the data would have been gathered from a large and diversified section of respondents belonging to different geographical locations.
3. Future research can examine the impacts of independent variables such as accessibility, Interpersonal influence, facilitating conditions, trust in e-government and perceived risk under the moderating effects on age, gender, experience,

education, and income. Prior research (e.g Wang and Shih, 2008) on e-government has also shown that moderating variables might provide the differences on the relationships between the determinants and intention to use Internet activities (e.g e-government, e-banking, and e-shopping).

4. The data for this research need to be collected from more diversified geographical locations to make the research outcome truly generalizable as far as the sample of this research is concerned.
5. The proposed model of e-Inclusion recommended by this research needs to be validated using data collected from other European countries to ensure that UK-based results can be generalized to other European countries. Verifying the model by using the data from different countries would allow future researchers to reflect on the pros and cons of this model.
6. Most studies on uses and gratifications have been quantitative (Ruggiero, 2000), Internet research being no exception (Grace-Farfaglia et al., 2006). Future research should focus on composing a suitable set of gratifications (For e-adoption domains in particular) through qualitative research which include in depth interviews. This will overcome the limited information available about the gratifications of new media (Ruggiero, 2000; Stafford et al., 2004). Identifying gratification dimensions specific to e-adoption domains will advance the knowledge in e-adoption research and will offer a clearer idea about what people are seeking from using e-government, e-shopping, and e-banking.
7. The model developed for this study can be tested in other cultural settings, like other Asian, Gulf and/or developing countries. This will be valuable in providing evidence concerning the robustness of the research model across different cultural settings. It is understood that the robustness of the model may vary across different cultural settings and thus need to be empirically tested (Mao and Palvia, 2006).
8. This study can be applied and replicated in other online domains, such as e-commerce. This would be valuable in establishing the external validity of model.

7.7 REVISITING THE AIM AND OBJECTIVES OF THIS STUDY

In Chapter one (Section 1.3), the aim of the thesis was identified: to investigate the key factors that influence e-Inclusion in the context of e-government in the UK. In support of this aim, the main objectives of the thesis were stated as:

RO 1. Review literature on e-Inclusion domain, concepts and fundamentals, the origin of e-Inclusion, the benefits of e-Inclusion, European strategies to promote e-Inclusion, e-Inclusion in the UK, theories and models that are relevant to e-Inclusion, and finally e-Inclusion taxonomy.

RO 2. Review literature on e-government domain, the origin of e-government, the stages of e-government, and theories that are relevant to e-government.

RO 3. A conceptual taxonomy must be formulated in order to identify and capture the factors influencing e-Inclusion, and to present a theoretical context to explain these factors.

RO 4. Conduct an explanatory study to evaluate the e-Inclusion taxonomy.

RO 5. Develop a theoretical model and research hypotheses to examine the factors that influence citizen's e-Inclusion in the context of e-government in the UK.

RO 6. Empirically validate the research model and hypotheses by conducting a quantitative questionnaire survey in the UK.

RO 7. Discuss the theoretical and practical implications of the findings and offer recommendations for future research directions.

The aim of this research was to investigate the key factors that influence e-Inclusion in the context of e-government in the UK (see Chapter 1, section 1.3). The objectives of the study were met as follows: Chapter 2 has presented literature review on both e-Inclusion and e-government domains, it has also explained how critically important is the parallel between e-government and e-Inclusion. Moreover, the chapter also presented a conceptual taxonomy to identify and capture the factors influencing e-Inclusion (RO1, RO2, and RO3). An explanatory study that has been conducted in the UK to evaluate e-Inclusion taxonomy (RO4) (Weerakkody et al., 2012). Chapter 3 presented a conceptual model that examines the factors that influence e-Inclusion. The chapter also provided theoretical justification for combining the uses and gratification theory and the decomposed theory of planned behaviour (RO5). Chapter 5 and 6 has analysed the data and discussed the research findings (RO6). A theoretical explanation of the relationship between e-inclusion and e-government and the factors that influence e-inclusion in this context was presented in Chapters 5 and 6 (RO7). As such, the study has addressed the research aim and objectives in a systematic manner justifying the methods used and steps taken along the way. This final chapter, Chapter 7, concludes the study, address the research gaps, and discuss the implications for theory and practice, and makes suggestions for further research.

7.8 CHAPTER SUMMARY

This chapter draws together the whole thesis by: evaluating the study's contribution; identifying the theoretical and practical implications; and then highlighting the study's limitations and future directions for research. To conclude, all the study's research objectives have been successfully addressed for this study, and in so doing, this study has been able to make some valuable new contributions to the body of literature.

REFERENCES

REFERENCES

- Adamson, I., and Shine, J. (2003). 'Extending the new technology acceptance model to measure the end user information systems satisfaction in a mandatory environment: A bank's treasury', *Technology Analysis and strategic management*, 15(4), pp.441-455.
- Advisory Government, and Public Sector (2009). *Champion for Digital Inclusion*. Price Waterhouse Coopers, United Kingdom.
- Aggarwal, U., and Bhargava, S. (2009). 'Reviewing the relationship between human resource practices and psychological contract and their impact on employee attitude and behaviours: A conceptual model', *Journal of European Industrial Training*, 33(1), pp.4-31.
- Ajzen, I. (1985). *From intentions to actions: A theory of planned behavior*. Springer.
- Ajzen, I. (1988). 'Attitudes, personality, and behavior'. Chicago: Dorsey.
- Ajzen, I. (1991). 'The theory of planned behavior'. *Organizational behavior and human decision processes*, 50(2), pp.179-211.
- Ajzen, I. and Fishbein, M. (1980). *Understanding attitudes and predicting social Behaviour*. Englewood Cliffs, NJ: Prentice-Hall.
- Ajzen, I. and Madden, T.J. (1986). 'Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control', *Journal of experimental social psychology*, 22(5), pp.453-474.
- Al-Adawi, Z., Yousafzai, S. and Pallister, J. (2005). 'Conceptual model of citizen adoption of e-government', *The Second International Conference on Innovations in Information Technology (IIT'05)* Citeseer.
- Albaum, G. and Peterson, R.A. (1984). 'Empirical research in international marketing: 1976-1982', *Journal of International Business Studies*, 15(1), pp. 161-173.
- Al-Gahtani, S. S., and King, M. (1999). 'Attitudes, satisfaction and usage: factors contributing to each in the acceptance of information technology'. *Behaviour and Information Technology*, 18(4), pp.277-297.
- Almuwil, A., Weerakkody, V. and El-Haddadeh, R. (2011). 'A Conceptual Study of the Factors Influencing E-Inclusion', *European, Mediterranean and Middle Eastern Conference on Information Systems, (EMCIS 2011), Athens, Greece*.
- Al-Sobhi, F., Weerakkody, V. and Kamal, M.M. (2010). 'An exploratory study on the role of intermediaries in delivering public services in Madinah City: Case of Saudi Arabia', *Transforming Government: People, Process and Policy*, 4(1), pp.14-36.
- Andersen, K. V., and Henriksen, H. Z. (2005). 'The first leg of E-Government research: Domains and application areas 1998-2003', *International Journal of Electronic Government Research*, 1(4), pp.26-44.
- Anderson, B. and Tracey, K. (2002). 'Digital living: The impact (or otherwise) of the Internet on everyday British life', *The Internet in everyday life*, 45(3), pp. 139-163.
- Anthias, F. (2001). 'The Concept of Social Division and Theorising Social Stratification: Looking at Ethnicity and Class', *Sociology*, 35(4), pp.835-854.

- Armstrong, C. L., and Mc Adams, M. J. (2009). 'Blogs of information: How gender cues and individual motivations influence perceptions of credibility'. *Journal of Computer Mediated Communication*, 14(3), pp.435-456.
- Association for Learning Technology (2009). 'Delivering Digital Inclusion'. A response to the consultation from the Association for Learning Technology. Available at: http://www.alt.ac.uk/docs/Delivering_Digital_Inclusion_ALT_response_to_consultation.pdf
- Bagozzi, R.P. (1992). 'The self-regulation of attitudes, intentions, and behavior'. *Social Psychology Quarterly*, 55(21), pp.178-204.
- Bagozzi, R.P., and Yi, Y. (1988). 'On the evaluation of structure equation models'. *Journal of the Academy of Marketing Science*, 16(1), pp.74-94.
- Bart, Y., Shankar, V., Sultan, F. and Urban, G.L. (2005). 'Are the drivers and role of online trust the same for all web sites and consumers? A large-scale exploratory empirical study', *Journal of Marketing*, 69(4), pp.133-152.
- Barzilai-Nahon, K. (2006). 'Gaps and bits: Conceptualizing measurements for digital divide/s', *The Information Society*, 22(5), pp.269-278.
- Baum, C. and Di Maio, A. (2000). 'Gartner's four phases of e-government model', Gartner Group.
- Becker, J., Niehaves, B. and Bergener, P. (2008). 'Digital Divide in e Government: The eInclusion Gap Model' in Electronic Government. *7th International Conference, EGOV 2008, Turin, Italy, August 31 - September 5, 2008. Proceedings Springer Berlin / Heidelberg*.
- Becta. (2008). 'Meeting their potential: the role of education and technology in overcoming disadvantage and disaffection in young people'. Available at: http://partners.becta.org.uk/upload-dir/downloads/page_documents/research/meeting_their_potential.doc
- Bekkers, V.J. and Zouridis, S. (1999). 'Electronic service delivery in public administration: Some trends and issues', *International Review of Administrative Sciences*, 65(2), pp.183-195.
- Bélanger, F. and Carter, L. (2008). 'Trust and risk in e-government adoption', *The Journal of Strategic Information Systems*, 17(2), pp.165-176.
- Belanger, F., and Cartel, L. (2006). 'The effects of the digital divide on e-government: An empirical Evaluation', *System Sciences, 2006. HICSS'06. Proceedings of the 39th Annual Hawaii International Conference on. Vol. 4. IEEE, 2006*.
- Belanger, F., and Cartel, L. (2009). 'The impact of the digital divide on e-government use', *Communications of the ACM*, 52(4), pp.132-135.
- Belanger, F., and Carter, L. (2008). 'Trust and risk in e-government adoption'. *The Journal of Strategic Information Systems*, 17(2), pp.165-176.
- Belanger, F., and Hiller, J. (2006). 'A framework for e-government: Privacy implications'. *Business Process Management Journal*, 12(1), pp.48-60.
- Belanger, F., Hiller, J.S. and Smith, W.J. (2002). 'Trustworthiness in electronic commerce: the role of privacy, security, and site attributes', *The Journal of Strategic Information Systems*, 11(3), pp.245-270.
- Benbasat, I. and Zmud, R.W. (1999). 'Empirical research in information systems: the practice of relevance', *MIS quarterly*, pp. 3-16.

- Bentivegna, S., & Guerrieri, P. (2010). Analysis of einclusion Impact Resulting from Advanced R&D Based on Economic Modeling Relation to Innovation Capacity, Capital Formation, Productivity, and Empowerment. *A Composite Index to measure digital Inclusion in Europe*. Brussel: European Commission.
- Berdie, D., Anderson, J., and Niebuhr, M. (1986). *Questionnaire Design and Use*. London, UK: The Scarecrow Press.
- Bernard, H.R. (2000). *Social Research Methods: Qualitative and Quantitative Approaches*, Sage Publication.
- Beynon-Davies, P. (2002). *Information Systems: an introduction to informatics in organisations*, Palgrave Basingstoke.
- Bhattacharjee, A. (2000). 'Acceptance of e-commerce services: the case of electronic brokerages', *Systems, Man and Cybernetics, Part A: Systems and Humans, IEEE Transactions on*, 30(4), pp.411-420.
- Bhattacharjee, A. (2012). 'Social science research: principles, methods, and practices'.
- Billon, M., Marco, R. and Lera-Lopez, F. (2009). 'Disparities in ICT adoption: A multidimensional approach to study the cross-country digital divide', *Telecommunications Policy*, 33(10), pp.596-610.
- Bimber, B. (1999). 'The Internet and citizen communication with government: Does the medium matter?', *Political Communication*, 16(4), pp.409-428.
- Bishop, A. P., Bazzell, I., Mehra, B., and Smith, C. (2001). 'Afya: Social and Digital Technologies That Reach across the Digital Divide,' *First Monday* (6:4)
- Blumler, J., and Katz, E. (1974). *The uses of mass communication*. Thousand Oaks, CA: Sage.
- Bowman, S., and Willis, C. (2003). 'We media. How audiences are shaping the future of news and information. The Media Center at the American Press Institute', VA: Reston.
- Boyd, D. M., and Ellison, N. B. (2010). 'Social network sites: definition, history, and scholarship'. *Engineering Management Review, IEEE*, 38(3), pp.16-31.
- Brace, N., Kemp, R., Snelgar, R. (2006). *SPSS for Psychologists*, 3rd Ed., Palgrave Macmillan, New York, NY,
- Bradbrook, G. and Fisher, J. (2004). 'Digital equality: reviewing digital inclusion activity and mapping the way forwards', *Citizens online*.
- Brandtzæg, P. B., Heim, J., & Karahasanović, A. (2011). 'Understanding the new digital divide—A typology of Internet users in Europe', *International journal of human-computer studies*, 69(3), pp.123-138.
- Brandtzæg, P.B., Heim, J. and Karahasanovi_, A. (2011). 'Understanding the new digital divide-A typology of Internet users in Europe', *International journal of human-computer studies*, 69(3), pp.123-138.
- Broos, A and Roe, K. (2006). 'The digital divide in the playstation generation: Self-efficacy, locus of control and ICT adoption among adolescents', *Poetics* 34(4), pp.306-317.
- Brown, David (2005). 'Electronic government and public administration', *International Review of Administrative Sciences*, 71(2), pp.241_254.

- Brown, M. M., and Brudney, J. L. (2001). 'Achieving advanced electronic government services: An examination of obstacles and implications from an international perspective', *In National Public Management Research Conference*. Bloomington.
- Brown, S.A. and Venkatesh, V. (2005). 'Model of adoption of technology in households: A baseline model test and extension incorporating household life cycle', *MIS quarterly*, 29(3) pp. 399-426.
- Bruno, G., Esposito, E., Genovese, A. and Gwebu, K.L. (2010). 'A critical analysis of current indexes for digital divide measurement', *The Information Society*, 27(1), pp.16-28.
- Bryman, A. (2004). *Social research methods*. 2nd edn. Oxford: Oxford University Press.
- Bryman, A. and Bell, E. (2011). *Business Research Methods*. 3^{edn}, Oxford university press.
- Burgoon, J.K. and Burgoon, M. (1980). 'Predictors of Newspaper Readership', *Journalism Quarterly*, 57(4), pp.589-596.
- Burns, A.C. and Bush, R.F. (2006). 'Marketing research', *Globalization*, 1, pp.7.
- Burt, D.E. and Taylor, J.A. (2008). 'Evaluating Intermediation: The Electronic Mixed Economy of Public Service Delivery', *Intl Journal of Public Administration*, 31(7), pp.730-748.
- Byrne, B.M. (2013). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Routledge.
- Cabinet Office Strategy Unit (2009). *Power in People's Hand*. Available at: www.strategy.gov.uk (Accessed: 4/32 2010).
- Cantril, H. (1942). 'Public opinion in flux', *The Annals of the American Academy of Political and Social Science*, pp.136-152.
- Cantril, H. and Allport, G.W. (1935). 'The psychology of radio.'
- Carter, L. and Bélanger, F. (2005). 'The utilization of e_government services: citizen trust, innovation and acceptance factors', *Information Systems Journal*, 15(1), pp.5-25.
- Carter, L. and Weerakkody, V. (2008). 'E-government adoption: A cultural comparison', *Information Systems Frontiers*, 10(4), pp.473-482.
- Carter, L., and Belanger, F. (2003). 'Diffusion of innovation and citizen adoption of e-government'. *In The Fifth International Conference on Electronic Commerce (ICECR-5)*, Pittsburg, PA (pp.57-63).
- Carter, L., Schaupp, L. C., Hobbs, J. and Campbell, R. (2011). 'The role of security and trust in the adoption of online tax filing', *Transforming Government: People, Process and Policy*, 5(4), pp.303-318.
- Chandler, S., and Emanuels, S. (2002). Transformation not automation. *In Proceedings of 2nd European Conference on E-government* (pp.91-102).
- Chau, P.Y. and Hu, P.J. (2001). 'Information technology acceptance by individual professionals: A model comparison approach', *Decision Sciences*, 32(4), pp.699-719.
- Chen, Q. and Wells, W. (1999). 'Attitude toward the Site', *Journal of Advertising Research*, 39(5). pp.27-38.
- Childers, T. L., and Rao, A. R. (1992). 'The influence of familial and peer-based reference groups on consumer decisions', *Journal of consumer research*, pp.198-211.

- Chou, C., and Hsiao, M. C. (2000). 'Internet addiction, usage, gratification, and pleasure experience: the Taiwan college students' case', *Computers and Education*, 35(1), pp.65-80.
- Churchill Gilbert, A. and Dawn, I. (1999). *Marketing research: methodological foundations*. Cengage Learning, vol. 9.
- Churchill, G.A., and Iacobucci, D. (2004). *Marketing research: Methodological foundations*. 9th edn. Ohio: Thomson South-Western.
- Codagnone, C. (2009). 'Vienna Study on Inclusive Innovation for Growth and Cohesion: Modelling and demonstrating the impact of eInclusion', *European Commission*.
- Cohen, L., Manion, L. and Morrison, K. (2000). *Research Methods in Education*. 5th edn. London: Routledge Falmer', Teaching in Higher Education, vol. 41.
- Colesca, S.E. (2009a). 'Understanding Trust in e-Government', *Economics of Engineering Decisions*, 3(3), pp.7-15.
- Colesca, S.E. (2009b). 'Increasing E-Trust: A Solution to Minimize Risk in E-Government Adoption'. *Journal of Applied Quantitative Methods*, 4(1), pp.31-44.
- Commission on Integration and Cohesion (England) (2007) *Our shared future*, Commission on Integration and Cohesion.
- Commission to the Council, The European Parliament^ dThe European Economic and Social Committee, y The Committee of the Regions (2007) 'European i2010 initiative on e-Inclusion «To Be Part of the Information Society». Impact Assessment. {COM (2007) 694 final SEC (2007) 1470}', .
- Compeau, D.R., and Higgins, C.A. (1995a). 'Application of social cognitive theory to training for computer skills', *Information Systems Research*, 6(2), pp.118-143.
- Comrey, A. and Lee, H. (1992). *A first course in factor analysis*. Lawrence Erlbaum Associates, Hillsdale, NJ.
- Cornford, T., and Smithson, S. (2006). *Project research in information systems: a student's guide*. Palgrave.
- Coursey, D., and Norris, D.F. (2008). 'Models of E-Government: Are They Correct? An Empirical Assessment'. *Public Administration Review*, 68(3), pp.523-36.
- Cox, D. F. (1967). Risk Handling in Consumer Behavior: An Intensive Study of Two Cases. In D. Cox (edn.), *Risk Taking and Information Handling in Consumer Behavior*, Harvard University Press, Cambridge, Mass.
- Creswell, J. W. (2008). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks: Sage.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*, Sage.
- Crump, B., and McIlroy, A. (2003). 'The digital divide: Why the' don't-want-tos' won't compute: Lessons from a New Zealand ICT project', *First Monday*, 8(12).
- Cuillier, D. and Piotrowski, S.J. (2009). 'Internet information-seeking and its relation to support for access to government records', *Government Information Quarterly*, 26(3), pp.441-449.

- Cullen J., Hadjivassiliou K. and Junge K. (2007). Status of eInclusion measurement, analysis and approaches for improvement. Available at: http://www.icele.org/downloads/e_inclusion_handbook_final_submitted_0307.pdf (Accessed: 02/28 2011).
- Culnan, M. J. (1984). *The Dimensions of Accessibility to Online Information: Implications for Implementing Office Information Systems*. ACM Transactions on Office Information Systems. 2, pp.141-150.
- Culnan, M. J. (1985). 'The Dimensions of Perceived Accessibility to Information: Implications for the Delivery of Information Systems and Services', *Journal of the American Society of Information Sciences*, 36, pp.302-308.
- Cutler, N. E., and Danowski, J. A. (1980). 'Process Gratification in Aging Cohorts', *Journalism Quarterly*, 57(2), pp.269-76.
- Damarin, S.K. (2000). 'The 'digital divide' versus digital differences: principles of equitable use of technology in education', *Educational Technology*, pp.17-22.
- Danziger, J.N. and Andersen, K.V. (2002). 'The Impacts of Information Technology on Public Administration: an Analysis of Empirical Research from the 'Golden Age' of Transformation [1]', *International Journal of Public Administration*, 25(5), pp.591-627.
- Davis, F.D. (1989). 'Perceived usefulness, perceived ease of use, and user acceptance of information technology'. *MIS Quarterly*, 13(3), pp.319-339.
- Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989). 'User acceptance of computer technology: a comparison of two theoretical models', *Management science*, 35(8), pp.982-1003.
- De Leeuw, E.D. and Dillman, D.A. (2008). *International handbook of survey methodology*. Taylor and Francis.
- Delli Carpini, M. X. (2000). 'Gen. com: Youth, civic engagement, and the new information environment', *Political communication*, 17(4), pp.341-349.
- Deloitte and Touche, (2001). *The citizen as customer*. CMA Manage., 74: 58-58.
- Denscombe, M. (2010). *The Good Research Guide: For Small-Scale Social Research Projects: For small-scale social research projects*. McGraw-Hill International.
- Didi, A. and LaRose, R. (2006). 'Getting hooked on news: Uses and gratifications and the formation of news habits among college students in an Internet environment', *Journal of Broadcasting and Electronic Media*, 50(2), pp.193-210.
- Digital Inclusion Team (2007). *The Digital Inclusion Landscape in England. Delivering Social Impact through Information and Communications Technology*, epractice website. Available at: <http://www.epractice.eu/files/media/media1881.pdf> (Accessed: 01/20 2011).
- Dijk, J.v. (2005c) *The deepening divide : inequality in the information society*, Sage Pub. Thousand Oaks, Calif. London.
- Dillman, D.A., Dolsen, D.E. and Machlis, G.E. (1995). 'Increasing response to personally-delivered mail-back questionnaires.', *Journal of Official Statistics*, 11(2), pp.129-139.

- DiMaggio, P. and Hargittai, E. (2001). *From the 'Digital Divide to Digital Inequality': Studying internet use as penetration increases*. Princeton Center for Arts and Cultural Policy Studies, Working Paper Series number 15.
- Dimmick, J., Kline, S., and Stafford, L. (2000). 'The gratification niches of personal e-mail and the telephone competition, displacement, and complementarity'. *Communication Research*, 27(2), pp.227-248.
- Dobos, J., and Dimmick, J. (1988). 'Factor analysis and gratification constructs', *Journal of Broadcasting and Electronic Media*, 32(3), pp.335-350.
- Dooley, D. (2000). *Social Research Method*. Upper Saddle River, NJ: Prentice Hall.
- Dutta-Bergman, M. J. (2005). 'Access to the Internet in the context of community participation and community satisfaction', *New Media and Society*, 7(1), pp.89-109.
- Dutton, W. H., and Blank, G. (2011). Next generation users: The internet in Britain.
- Dutton, W.H., Helsper, E.J., Gerber, M.M. and Oxford Internet Institute (2009). *The internet in Britain: 2009*. Oxford Internet Institute.
- Dwivedi, Y. and Irani, Z. (2009). 'Understanding the adopters and non-adopters of broadband', *Communications of the ACM*, 52(1), pp.122-125.
- Dwivedi, Y.K., Papazafeiropoulou, A., Gharavi, H. and Khoumbati, K. (2006). 'Examining the socio-economic determinants of adoption of the 'Government Gateway' initiative in the UK', *Electronic Government, an International Journal*, 3(4), pp.404-419.
- Eastin, M.S. and LaRose, R. (2000) 'Internet self_efficacy and the psychology of the digital divide', *Journal of Computer_Mediated Communication*, vol. 6, no. 1, pp. 0-0.
- Edmiston, K. D. (2003). 'State and local e-government: Prospects and challenges', *The American Review of Public Administration*, 33(1), pp.20-45.
- Eggermont, S., Vandebosch, H., and Steyaert, S. (2006). 'Towards the desired future of the elderly and ICT: Policy recommendations based on a dialogue with senior citizens', *Poiesis and Praxis*, 4(3), pp.199-217.
- Eighmey, J. (1997). 'Profiling user responses to commercial Websites', *Journal of Advertising Research*, pp.59-67.
- Eighmey, J. and McCord, L. (1998). 'Adding value in the information age: Uses and gratifications of sites on the World Wide Web', *Journal of business research*, 41(3), pp.187-194.
- eInclusion@EU (2007). *Strengthening eInclusion and eAccessibility across Europe. Final Project Report*.
- Enhart, A. (2002, October). 'Barriers to Internet access: From the non-user and new user perspective', *In Association of Internet Researchers Conference*, 3, pp.1-27.
- European Commission (2001). 'e-Inclusion: The information society's potential for social inclusion in Europe', See URL: http://ec.europa.eu/employment_social/soc-dial/info_soc/esdis/eincl_en.pdf [Last Consulted 22 May 2009].
- European Commission (2004). 'eInclusion@ EU: Strengthening eInclusion & eAccessibility across Europe', *Analytic framework-eInclusion and eAccessibility priority issues*.

- European Commission (2009). 'Dealing with the impact of an ageing population in the EU (2009 Ageing Report)', *COM (2009) 180final*, 29(04), pp.2009.
- European Commission (2009). Commission earmarks €1bn for investment in broadband-frequently asked questions. Press release.
- European Commission eInclusion Factsheet (2010). *eInclusion in the United Kingdom*, European Commission eInclusion.
- Featherman, M.S. and Pavlou, P.A. (2003). 'Predicting e-Services Adoption: A Perceived Risk Facets Perspective', *International Journal of Human-Computer Studies*, 59(4), pp.451-474.
- Fenech, T. (1998). 'Using perceived ease of use and perceived usefulness to predict acceptance of the World Wide Web', *Computer Networks and ISDN Systems*, 30(1-7), pp.629-31.
- Ferguson, D.A. and Perse, E.M. (2000). 'The World Wide Web as a functional alternative to television', *Journal of Broadcasting and Electronic Media*, 44(2), pp.155-174.
- Ferro, E., Cantamessa, M., & Paolucci, E. (2005). Urban versus regional divide: comparing and classifying digital divide. In *E-government: Towards electronic democracy* (pp. 81-90). Springer Berlin Heidelberg.
- Ferro, E., Helbig, N. C., and Gil-Garcia, J. R. (2011). 'The role of IT literacy in defining digital divide policy needs', *Government Information Quarterly*, 28(1), pp.3-10.
- Fink, A. (2003). *How to sample in surveys*. Sage.
- Fishbein, M. and Ajzen, I. (1975) Belief, attitude, intention and behavior: An introduction to theory and research, .
- Flanagin, A. J., and Metzger, M. J. (2001). 'Internet use in the contemporary media environment', *Human communication research*, 27(1), pp.153-181.
- Fornefeld, M., Delaunay, G., and Elixmann, D. (2008). The impact of broadband on growth and productivity. A study on behalf of the European Commission.
- Fowler, F.J. (2014). *Survey research methods*. Sage publications.
- Freese, J., Rivas, S., and Hargittai, E. (2006). 'Cognitive ability and Internet use among older adults', *Poetics*, 34(4), pp.236-249.
- Fuchs, C. (2009). 'The role of income inequality in a multivariate cross-national analysis of the digital divide', *Social Science Computer Review*, 27(1), pp.41-58.
- Furuholt, B., and Wahid, F. (2008). E-government Challenges and the Role of Political Leadership in Indonesia: The Case of Sragen. *41st Hawaii International Conference on System Sciences*, pp.1-10.
- Garson, G. D. (1999). *Lives and Public Policies: Confidentiality and Accessibility of Government Statistics*.
- Gefen, D., Rose, G.M., Warkentin, M. and Pavlou, P.A. (2005). 'Cultural diversity and trust in IT adoption: A comparison of potential e-voters in the USA and South Africa', *Journal of Global Information Management (JGIM)*, 13(1), pp.54-78.
- Gilbert, N. (2001). *Researching Social Life*. Sage Publications, London.
- Gil-García, J. R., and Luna-Reyes, L. F. (2006). *Integrating conceptual approaches to e-government*. Encyclopedia of e-commerce, e-government and mobile commerce, pp.636-643.

- Gil-Garcia, Ramon J., and Luna-Reyes, Luis (2006). Integrating conceptual approaches to EGovernment.
- Gliem, J. A. and Gliem, R.R. (2003). Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales. *Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education*.
- Goldfinch, S., Gauld, R. and Herbison, P. (2009). 'The Participation Divide? Political Participation, Trust in Government, and E-government in Australia and New Zealand', *Australian Journal of Public Administration*, 68(3), pp.333-350.
- Gorard, S. (2003). *Quantitative methods in social science research*. Bloomsbury Publishing.
- Gov3 Project (2005). *Benchmarking digital inclusion*. Available at: http://www.digitalaccess.org/pdfs/gov3_Digital_Inclusion07.pdf (Accessed: July 05 2011).
- Grace-Farfaglia, P., Dekkers, A., Sundararajan, B., Peters, L., & Park, S. H. (2006). 'Multinational web uses and gratifications: Measuring the social impact of online community participation across national boundaries', *Electronic Commerce Research*, 6(1), pp.75-101.
- Great Britain. Parliament. House of Commons. Welsh Affairs Committee. and Francis, H. (2010). *Digital inclusion in Wales : follow-up : minutes of evidence*, The Stationery Office, London.
- Greenberg, B. S. (1974). Gratifications of television viewing and their correlates for British children. The uses of mass communications: Current perspectives on gratifications research, pp.71-92.
- Grönlund, Å. and Horan, T.A. (2005). 'Introducing e-gov: history, definitions, and issues', *Communications of the Association for Information Systems*, 15(1), p.39.
- Guba, E.G. and Lincoln, Y.S. (1994). 'Competing paradigms in qualitative research', *Handbook of qualitative research*, 2, pp.163-194.
- Guerrieri, P. and Bentivegna, S. (2011). *The economic impact of digital technologies: Measuring inclusion and diffusion in Europe*. Edward Elgar Publishing.
- Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1992). *Multivariate data analysis with readings*. 3rd edn. New York, NY: Macmillan Publishing Company.
- Hair, J.F., Tatham, R.L., Anderson, R.E. and Black, W. (2006). *Multivariate data analysis*. Pearson Prentice Hall Upper Saddle River, NJ.
- Halchin, L. E. (2004). Electronic government: Government capability and terrorist resource. *Government Information Quarterly*, 21(4), pp.406-419.
- Hanafizadeh, P., Hanafizadeh, M. R., and Khodabakhshi, M. (2009). 'Taxonomy of e-readiness assessment measures', *International Journal of Information Management*, 29(3), pp.189-195.
- Hargittai, E. (2002). 'Beyond logs and surveys: In_depth measures of people's web use skills', *Journal of the American Society for Information Science and Technology*, 53(14), pp.1239-1244.
- Hargittai, E. (2002). 'Second-level digital divide: Differences in people's online skills', *First monday*, 7(4).
- Hargittai, E. (2004) 'Internet access and use in context', *New Media and Society*, 6, pp.137-143.
- Hargittai, E. (Ed.). (2009). *Research confidential: solutions to problems most social scientists pretend they never have*. University of Michigan Press.

- Hargittai, E. and Hinnant, A. (2008). 'Digital inequality differences in young adults' use of the internet', *Communication Research*, 35(5), pp.602-621.
- Harrison, D.A., Mykytyn, P.P., and Riemenschneider, C.K. (1997). 'Executive Decisions about Adoption of Information Technology in Small Business: Theory and Empirical Tests'. *Information Systems Research*, 8(2), pp.171-195.
- Hassani, S. N. (2006). 'Locating digital divides at home, work, and everywhere else', *Poetics*, 34(4), pp.250-272.
- Heeks, R. (Ed.). (1999). 'Reinventing government in the information age', *International practice in IT-enabled public sector reform*, 1. Psychology Press.
- Heeks, R., and Bailur, Savita (2007). 'Analyzing E-Government research: Perspectives, philosophies, theories, methods, and practice', *Government information quarterly* 24(2), pp.243-265.
- Heeks, R.B. (2001). What did Giddens and Latour ever do for us? Academic writings on information systems and development. *Information Technology in Developing Countries*, 11(1).
- Helbig, N., Ramón Gil-García, J. and Ferro, E. (2009). 'Understanding the complexity of electronic government: Implications from the digital divide literature', *Government Information Quarterly*, 26(1), pp.89-97.
- Helsper, E. (2008). *Digital Inclusion: An Analysis of Social Disadvantage and the Information Society, Communities and Local Government*. London.
- Helsper, E. (2014). *Digital Inclusion in Europe: Evaluating Policy and Practice*, Discussion paper. *Peer Review on digital inclusion, Spain 2014*.
- Helsper, E. J. (2007). *Internet use by teenagers: social inclusion, self-confidence and group identity*. Doctoral dissertation, London School of Economics and Political Science (LSE).
- Helsper, E.J. (2012). 'A corresponding fields model of digital inclusion', *Communication Theory*, 22(4), pp.403-426.
- Helsper, E.J. and Eynon, R. (2010). 'Digital natives: where is the evidence?', *British Educational Research Journal*, 36(3), pp.503-520.
- Herzog, H., (1944). What do we really know about day-time serial listeners? In P. Lazarsfeld and F. Stanton (Eds.), *Radio research 1942-1943*. New York: Duel, Sloan and Pearce, pp.3-33.
- Hiller, J.S. and F. Belanger, 2001. *Privacy Strategies for Electronic Government*. Rowman and Littlefield Publishers, North America, pp.162-198.
- Hinton, P. R., Brownlow, C., McMurray, I. and Cozens, B. (2004). *SPSS explained*. Routledge Inc. East Sussex, England.
- Ho, A. T.-K. (2002). 'Reinventing Local Government and the E-Government Initiative' *Public Administration Review*, (62)4, pp.434-444.
- Hoffman, D., Novak, T.P., and Peralta, M. (1999). 'Building consumer trust online', *Communications of the ACM*, 42(4), pp.80-85.
- Horsburgh, S., Goldfinch, S., and Gauld, R. (2011). 'Is public trust in government associated with trust in e-government?', *Social Science Computer Review*, 29(2), pp.232-241.

- Horst, M., Kuttschreuter, M. and Gutteling, J.M. (2007). 'Perceived usefulness, personal experiences, risk perception and trust as determinants of adoption of e-government services in The Netherlands', *Computers in Human Behavior*, 23(4), pp.1838-1852.
- Howard, P.E., Rainie, L. and Jones, S. (2001). 'Days and nights on the Internet: The impact of a diffusing technology', *American Behavioral Scientist*, 45(3), pp.383-404.
- Hsieh, J. P. A., Rai, A., and Keil, M. (2011). 'Addressing digital inequality for the socioeconomically disadvantaged through government initiatives: Forms of capital that affect ICT utilization', *Information Systems Research*, 22(2), pp.233-253.
- Hsu, M. and Chiu, C. (2004). 'Predicting electronic service continuance with a decomposed theory of planned behaviour', *Behaviour and Information Technology*, 23(5), pp.359-373.
- Hu, P. J., Chau, P. Y., Sheng, O. R. L., and Tam, K. Y. (1999). 'Examining the technology acceptance model using physician acceptance of telemedicine technology', *Journal of management information systems*, pp.91-112.
- Huang, E. (2008). 'Use and gratification in e-consumers', *Internet Research*, 18(4), pp.405-426.
- Hung, S., Chang, C. and Yu, T. (2006). 'Determinants of user acceptance of the e-Government services: The case of online tax filing and payment system', *Government Information Quarterly*, 23(1), pp.97-122.
- Iacobucci, D., and Churchill, G.A., (2010). *Marketing Research Methodological Foundations*. 10th edn. South-Western: Cengage Learning.
- Iayashree, S. and Marthandan, G. (2010) 'Government to e-government to e-society', *Journal of Applied Sciences*, 10(19), pp.2205-2210.
- Irani, Z., Dwivedi, Y.K. and Williams, M.D. (2009). 'Understanding consumer adoption of broadband: an extension of the technology acceptance model', *Journal of the Operational Research Society*, 60(10), pp.1322-1334.
- Israel, G.D. (1992). Determining sample size, University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences, EDIS.
- Jackson, C.M., Chow, S., and Leitch, R.A. (1997). 'Toward an understanding of the behavioral intention to use an information system', *Decision Sciences*, 28(2), pp.357-389.
- James, M.L., Wotring, C.E. and Forest, E.J. (1995). 'An exploratory study of the perceived benefits of electronic bulletin board use and their impact on other communication activities', *Journal of Broadcasting and Electronic Media*, 39, pp.30-50.
- Janssen, M. and Wagenaar, R., Beerens J. (2003). 'Towards a Flexible ICT-Architecture for Multi-Channel E-Government Service Provisioning ', *36th Annual Hawaii International Conference on System Sciences (HICSS'03)* - Track 5.
- Jarvenpaa, S.L., Tractinsky, N., and Vitale, M. (2000). 'Consumer Trust in an Internet Store', *Information Technology and Management*, 1(1), pp.45-71.
- Jennings, M. K., and Zeitner, V. (2003). 'Internet use and civic engagement: A longitudinal analysis', *Public Opinion Quarterly*, 67(3), pp.311-334.

- Johnson, T.J. and Kaye, B.K. (2003). 'Around the World Wide Web in 80 ways how motives for going online are linked to Internet activities among politically interested Internet users', *Social Science Computer Review*, 21(3), pp.304-325.
- Jöreskog, K. G., and Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Scientific Software International.
- Josefsson, U. and Ranerup, A. (2003). 'Consumerism revisited: The emergent roles of new electronic intermediaries between citizens and the public sector', *Information Polity*, 8(3, 4), pp.167-180.
- Kaplan, D. (2005). *e-Inclusion: New challenges and policy recommendations*. Brussels: eEurope Advisory Group.
- Karahanna, E., Straub, D.W., and Chervany, N.L. (1999). 'Information technology adoption across time: A cross-sectional comparison of pre-adoption and post-adoption beliefs', *MIS Quarterly*, 23(2), pp.183-213.
- Katz, E., Blumler, J.G. and Gurevitch, M. (1974) *The uses of mass communication: Current Perspectives on gratifications research*. Sage Publications.
- Katz, J. E., Rice, R. E., and Aspden, P. (2001). 'The Internet, 1995-2000: Access, civic involvement, and social interaction', *American Behavioral Scientist*, 45(3), pp.405-419
- Katz, J., and Aspden, P. (1997). 'Motivations for and barriers to Internet usage: results of a national public opinion survey', *Internet Research*, 7(3), pp.170-188.
- Kaye, B. K., and Johnson, T. J. (2002). 'Online and in the know: Uses and gratifications of the Web for political information', *Journal of Broadcasting and Electronic Media*, 46(1), pp.54-71.
- Kaye, B.K. and Johnson, T.J. (2004) 'A Web for all reasons: uses and gratifications of Internet components for political information', *Telematics and Informatics*, 21(3), pp.197-223.
- Kertesz, S. (2003). Cost-benefit analysis of e-government investments. Retrieved at: <http://www.edemocratie.ro/publicatii/Cost-Benefit.pdf> (2010, August).
- King, J., Gurbaxani, V., Kraemer, K., McFarlan, F., Raman, F. and Yap, F.W. (1994), 'Institutional factors in information technology innovation', *Information Systems Research*, Vol. 5 No. 2, pp. 139-169.
- Kinsella K, He W (2009) *An aging world: 2008*, Washington, DC: U.S. Government Printing Office, U.S. Census Bureau, International Population Reports, P95/09-1.
- Kling, R. and M. Elliott. 'Digital Library Design for Organisational Usability.' *SIGOIS Bulletin*, 15(2), pp.59-69.
- Ko, H., Cho, C. and Roberts, M.S. (2005). 'Internet uses and gratifications: A structural equation model of interactive advertising', *Journal of advertising*, 34(2), pp.57-70.
- Korgaonkar, P.K. and Wolin, L.D. (1999). 'A multivariate analysis of web usage', *Journal of Advertising Research*, 39, pp.53-68.
- Kraemer, K. L., et al. (1978). *Local Government and Information Technology in the United States*. Paris: OECD Informatics Studies #12.
- Kvasny, L. (2002). A conceptual framework for examining digital inequality. *AMCIS 2002 Proceedings*, 246.

- Kymlicka, W. (1998). 'Introduction: an emerging consensus?', *Ethical Theory and Moral Practice*, 1(2), pp.143-157.
- La Porte, T. M., De Jong, M., and Demchak, C. C. (1999). Public organizations on the World Wide Web: Empirical correlates of administrative openness. Retrieved December 1, 2010, from <http://www.cyprg.arizona.edu/publications/correlat.rtf>.
- LaRose, R. and Atkin, D. (1988). 'Satisfaction, demographic, and media environment predictors of cable subscription', *Journal of Broadcasting and Electronic Media*, 32(4), pp.403-413.
- LaRose, R. and Eastin, M.S. (2004). 'A social cognitive theory of Internet uses and gratifications: Toward a new model of media attendance', *Journal of Broadcasting and Electronic Media*, 48(3), pp.358-377.
- Lau, A.S. (2004). 'Strategies to encourage the adoption of G2C e-government services in Hong Kong', *Electronic Government, an International Journal*, 1(3), pp.273-292.
- Lau, A.S. and Kwok, V.W. (2007). 'How e-government strategies influence e-commerce adoption by SMEs', *Electronic Government, an International Journal*, 4(1), pp.20-42.
- Layne, K., and Lee, J. (2001). 'Developing fully functional E-government: A four stage model', *Government Information Quarterly*, 18(2), pp.122-136.
- Lean, O.K., Zailani, S., Ramayah, T. and Fernando, Y. (2009). 'Factors influencing intention to use e-government services among citizens in Malaysia', *International Journal of Information Management*, 29(6), pp.458-475.
- Liang, T-P., Lai, H-J. and Ku, Y-C. (2006). 'Personalized content recommendation and user satisfaction: theoretical synthesis and empirical findings', *Journal of Management Information Systems*, 23(3), pp.45-70.
- Liao, S., Shao, Y. P., Wang, H., and Chen, A. (1999). 'The adoption of virtual banking: an empirical study', *International journal of information management*, 19(1), pp.63-74.
- Lindner, J. R., Murphy, T. H., and Briers, G. E. (2001). 'Handling nonresponse in social science research', *Journal of Agricultural Education*, 42(4), pp.43-53.
- Livingstone, S. (2008). 'Taking risky opportunities in youthful content creation: teenagers' use of social networking sites for intimacy, privacy and self-expression', *New media and society*, 10(3), pp.393-411.
- Longley, P.A. (2003). 'Towards better understanding of digital differentiation', *Computers, Environment and Urban Systems*, 27(2), pp.103-106.
- Loonam, M., and O'loughlin, D. (2008). 'Exploring e-service quality: a study of Irish online banking', *Marketing Intelligence and Planning*, 26(7), pp.759-780.
- Losh, S.C. (2003). 'Gender and educational digital chasms in computer and internet access and use over time: 1983-2000', *IT & Society*, 1(4), pp.73-86.
- Luo, M.M., Chea, S. and Chen, J. (2011). 'Web-based information service adoption: A comparison of the motivational model and the uses and gratifications theory', *Decision Support Systems*, 51(1), pp.21-30.
- Luo, X. (2002). 'Uses and gratifications theory and e-consumer behaviors: a structural equation modeling study', *Journal of Interactive Advertising*, 2(2), pp.34-41.

- Lupac, P. and Sladek, J. (2008). 'The deepening of the digital divide in the Czech Republic', *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 2(1), pp.
- Lynne, G. D., Casey, C. F., Hodges, A., and Rahmani, M. (1995). 'Conservation technology adoption decisions and the theory of planned behaviour', *Journal of Economic Psychology*, 16(4), pp.581-598.
- Malhotra, N. and Birks, D. (2007). *Marketing Research: an applied approach*. 3rd edn. European Edition, Pearson Education.
- Malhotra, N.K. (1999). *Marketing research: An applied orientation*. 3rd edn. New Jersey: Prentice Hall.
- Mancinelli, E. (2008) 'e-Inclusion in the Information Society', Information Society. In *Theory to Political Practice: Course book*. Budapest: Gondolt-Új Mandátum.
- Mäntymäki, M., Merikivi, J., Verhagen, T., Feldberg, F. and Rajala, R. (2014) 'Does a contextualized theory of planned behavior explain why teenagers stay in virtual worlds?', *International Journal of Information Management*, 34(5), pp.567-576.
- Mao, E., & Palvia, P. (2006). 'Testing an extended model of IT acceptance in the Chinese cultural context', *ACM SIGMIS Database*, 37(2-3), pp.20-32.
- Mariën, I. and Van Audenhove, L. (2010). Embedding e-inclusion initiatives in people's daily reality: The role of social networks in tackling the digital divide. *Digitas Conference*, Sibiu, Rumania.
- Mathieson, K. (1991). 'Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior', *Information systems research*, 2(3), pp.173-191.
- Mayer, R.C., Davis, J.H., and Schoorman, F.D. (1995). 'An integrative model of organizational trust', *Academy of Management Review*, 20(3), pp.709-734.
- McGregor, E. B., Jr. (2001). Web page accountability: The case of public schools. Bloomington, IN: *Paper presented at the National Public Management Research Conference*.
- McKnight, D.H. and Chervany, N.L. (2002). 'What trust means in e-commerce customer relationships: an interdisciplinary conceptual typology', *International journal of electronic commerce*, 6, pp.35-60.
- McNeal, R., Hale, K. and Dotterweich, L. (2008). 'Citizen-government interaction and the Internet: Expectations and accomplishments in contact, quality, and trust', *Journal of Information Technology and Politics*, 5(2), pp.213-229.
- McQuail, D. (1985). Sociology of mass communication. *Annual Review of Sociology*, pp.93-111.
- Means, G., Schneider, D. M., and Foreword By-Schiro, J. J. (2000). *Metacapitalism: The e-Business Revolution and the Design of 21st-century companies and Markets*. John Wiley and Sons, Inc..
- Meo, P.D., Quattrone, G., and Ursino, D. (2008). 'A Multi-agent System for Assisting Citizens in their Search of E-Government Services', *ACM Symposium on Applied Computing*, 38(5), pp.686-698.
- Millard, J. (2004). Reorganisation of government back-offices for better electronic public services. In *Electronic Government* (pp. 363-370). Springer Berlin Heidelberg.
- Mingers, J. (2001) 'Combining IS research methods: towards a pluralist methodology', *Information systems research*, 12(3), pp.240-259.
- Mingers, J., (2003). 'The paucity of multi-method research: A review of the information systems literature', *Information Systems Journal*, 13(3), pp.233-249.

- Mitra, R. and Gupta, M. (2008). 'A contextual perspective of performance assessment in eGovernment: A study of Indian Police Administration', *Government Information Quarterly*, 25(2), pp.278-302.
- Miyazaki, A. D., and Fernandez, A. (2001). 'Consumer perceptions of privacy and security risks for online shopping', *Journal of Consumer Affairs*, 35(1), pp.27-44.
- Moon, J. and Kim, Y. (2001). 'Extending the TAM for a World-Wide-Web context', *Information and Management*, 38(4), pp. 217-230.
- Moore, G.C., and Benbasat, I. (1991). 'Development of an instrument to measure the perceptions of adopting an information technology innovation', *Information Systems Research*, 2(3), pp.192-222.
- Mordini, E., Wright, D., De Hert, P., Mantovani, E., Wadhwa, K.R., Thestrup, J. and Van Steendam, G. (2009). 'Ethics, e-inclusion and ageing', *Studies in Ethics, Law, and Technology*, 3(1), p.5.
- Morris, M., and Ogan, C. (1996). 'The Internet as mass medium', *Journal of Computer Mediated Communication*, 1(4), pp.0-0.
- Morris, M.G. and Venkatesh, V. (2000). 'Age differences in technology adoption decisions: Implications for a changing work force', *Personnel Psychology*, 53(2), pp.375-403.
- Mossberger, K., Kaplan, D., and Gilbert, M. A. (2006). How concentrated poverty matters for the digital divide: motivation, social networks, and resources. In *Annual Meeting of the American Political Science Association*.
- Mossberger, K., Tolbert, C. J., and Stansbury, M. (2003). *Virtual Inequality: Beyond the Digital Divide*. Georgetown University Press. Washington, DC.
- Mossberger, K., Tolbert, C., Johns, K., & King, B. (2006). The digital divide and economic opportunity: does internet use matter for less-skilled workers?. *American Political Science Association*.
- Mossberger, K., Tolbert, C.J. and Stansbury, M. (2003). *Virtual inequality: Beyond the digital divide*. Georgetown Univ Pr.
- Moutinho, L. (1987). 'Consumer behaviour in tourism', *European journal of marketing*, 21(10), pp.5-44.
- Mukherji, J., Mukherji, A., and Nicovich, S. (1998). *Understanding dependency and use of the internet: a uses and gratifications perspective*. American Marketing Association, Boston, MA.
- Murphy, J. (2005). *Beyond e-government the world's most successful technology-enabled transformations, Executive Summary, INSEAD the business school for the world*. pp.1-124.
- Muthen, L.K., and Muthen, B.O. (2002). 'How to use a Monte Carlo study to decide on sample size and determine power', *Structural Equation Modelling*, 9(4), pp.599-620.
- Myers, M.D. and Avison, D. (1997). 'Qualitative research in information systems', *Management Information Systems Quarterly*, 21, pp.241-242.
- Nam, T. (2014) 'Determining the type of e-government use', *Government Information Quarterly*, vol. 31, no. 2, pp. 211-220.
- Neu, C. R., Anderson, R. H., and Bikson, T. K. (1999). *Sending your government a message*. Rand Corporation.
- Neuman, W.L. and Neuman, W.L. (2006). *Social research methods: Qualitative and quantitative approaches*.

- Niehaves, B. and Plattfaut, R. (2010). 'What is the issue with internet acceptance among elderly citizens? theory development and policy recommendations for inclusive e-government', *Electronic Government*, pp.275-288.
- Niehaves, B., and Becker, B. (2008). The Age-Divide in E-Government - Data, Interpretations, Theory Fragments. In M. Oya, R. Uda, and C. Yasunobu, (eds.) *International Federation for Information Processing (IFIP)*, Boston: Springer, 286, pp.279-287.
- Norris, P. (2001). *Digital divide: Civic engagement, information poverty, and the Internet worldwide*. Cambridge University Press.
- Oliver, Richard L. (1980). 'A cognitive model of the antecedents and consequences of satisfaction decisions', *Journal of Marketing Research*, pp.460-469.
- Ono, H., and Zavodny, M. (2003). 'Gender and the Internet', *Social Science Quarterly*, 84(1), pp.111-121.
- Orgeron, C.P., and Goodman, D. (2011). 'Evaluating Citizen Adoption and Satisfaction of E-Government', *International Journal of Government Research*, 7(3), pp.57-78.
- Orlikowski, W.J. and Baroudi, J.J. (1991). 'Studying information technology in organizations: Research approaches and assumptions', *Information systems research*, 2(1), pp.1-28.
- O'Sullivan, L. F., Udell, W., Montrose, V. A., Antonello, P., and Hoffman, S. (2010). 'A cognitive analysis of college students' explanations for engaging in unprotected sexual intercourse', *Archives of sexual behavior*, 39(5), pp.1121-1131.
- Ozkan, S. and Kanat, I.E. (2011). 'e-Government adoption model based on theory of planned behavior: Empirical validation', *Government Information Quarterly*, 28(4), pp.503-513.
- P. Palmgreen, L.A. Wenner, J.D. Rayburn II (1981). 'Gratification discrepancies and news program choice', *Communication Research*, 8(4), pp.451-478.
- Palmgreen, P., and Rayburn, J. D., (1985). An expectancy-value approach to media gratifications. In K. E. Rosengren, L. A. Wenner, and P. Palmgreen (Eds.), *Media gratifications research* (pp.61-72). London: Sage Publications.
- Papacharissi, Z. and Rubin, A.M. (2000). 'Predictors of Internet use', *Journal of Broadcasting and Electronic Media*, 44(2), pp.175-196.
- Parent, M., Vandebeek, C.A. and Gemino, A.C. (2005). 'Building citizen trust through e-government', *Government Information Quarterly*, 22(4), pp.720-736.
- Parker, B. J., and Plank, R. E. (2000). 'A uses and gratifications perspective on the Internet as a new information source', *American Business Review*, 18(2), pp.43-49.
- Pavlou, P. (2003). 'Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model', *International Journal of Electronic Commerce*, 7(3), pp.69-103.
- Pavlou, P.A. and Fygenson, M. (2006). 'Understanding and predicting electronic commerce adoption: an extension of the theory of planned behavior', *MIS quarterly*, pp.115-143.
- Peña-López, I. (2001) 'Spanning The Digital Divide. Understanding And Tackling The Issues', .
- Peña-López, I. (2005). *e-Learning for Development: a model*. vol. 1. ICTlogy Working Paper Series.

- Perse, E. M., and Dunn, D. G. (1998). 'The utility of home computers and media use: Implications of multimedia and connectivity', *Journal of Broadcasting and Electronic Media*, 42(4), pp.435-456.
- Phillips, E., and Pugh, D. (2010). *How to get a PhD: A handbook for students and their supervisors*. McGraw-Hill International.
- Pierce, J. C., and Lovrich, N. P. (2003). 'Internet Technology Transfer and Social Capital: Aggregate and Individual Relationships in American Cities', *Comparative Technology Transfer and Society*, 1(1), pp.49-71.
- Pinsonneault, A. and Kraemer, K.L. (1993). 'The impact of information technology on middle managers', *MIS Quarterly*, pp.271-292.
- Pires, G., Stanton, J., and Eckford, A. (2004). 'Influences on the perceived risk of purchasing online', *Journal of Consumer Behaviour*, 4(2), pp.118-131.
- Plummer, J.T. (1971). 'A theoretical view of advertising communication', *Journal of Communication*, 21(4), pp.315-325.
- Punch, K., (2005). *Introduction to social research: quantitative and qualitative approaches*. 2nd edn. London: Sage.
- Punch, K.F. (2013). *Introduction to social research: Quantitative and qualitative approaches*. Sage.
- Rayburn, J.D., Palmgreen, P., Acker, T. (1984). 'Media gratifications and choosing a morning news program', *Journalism Quarterly*, 61(1), pp.149-156.
- Reddick, C.G. (2004). 'A two-stage model for e-government growth: Theories and empirical evidence for U.S. cities', *Government Information Quarterly*, 21, pp.51-64.
- Reddick, C.G. (2005a). 'Citizen interaction with e-government: From the streets to servers?', *Government Information Quarterly*, 22(1), pp.38-57.
- Reddick, Christopher (2005). 'Citizen interaction with E-Government: From the streets to servers?', *Government Information Quarterly* 22(1), pp.38-57.
- Richardson, H. and Robinson, B. (2007). 'The mysterious case of the missing paradigm: a review of critical information systems research 1991-2001', *Information Systems Journal*, 17(3), pp.251-270.
- Riga (2006). Ministerial Declaration on an Inclusive Information Society, Presidency of the EU Council of Ministers, June. Available at: http://ec.europa.eu/information_society/activities/ict_psp/documents/declaration_riga.pdf
- Robey, D. (1996). 'Research commentary: diversity in information systems research: threat, promise, and responsibility', *Information Systems Research*, 7(4), pp.400-408.
- Robson, C. (2002). *Real word research*. Oxford: Blackwell.
- Rogers, E.M. (1983). *Diffusion of Innovations*, Free Press, New York, NY.
- Rogers, E.M. (1995). *Diffusion of Innovations*. 4th edn. New York: Free Press.
- Rogers, E.M. (2003) 'Elements of diffusion', *Diffusion of innovations*, 5, pp.1-38.
- Rotchanakitumnuai, S. (2008). 'Measuring e-government service value with the E-GOVQUAL-RISK model', *Business Process Management Journal*, 14(5), pp.724-737.

- Rubin, A.M. (1983) 'Television uses and gratifications: The interactions of viewing patterns and motivations', *Journal of Broadcasting and Electronic Media*, 27(1), pp.37-51.
- Rubin, A.M. (1994). 'Media uses and effects: A uses-and-gratifications perspective'.
- Rufin, R., Medina, C., and Sánchez Figueroa, J. C. (2012). 'Moderating factors in adopting local e-government in Spain', *Local Government Studies*, 38(3), pp.367-385.
- Ruggiero, T.E. (2000). 'Uses and gratifications theory in the 21st century', *Mass communication and society*, 3(1), pp.3-37.
- Saebø, Ø., Rose, J., and Flak, L. S. (2008). 'The shape of eParticipation: Characterizing an emerging research area', *Government Information Quarterly*, 25(3), pp.400-428.
- Sahraoui, S. (2007). E-inclusion as a further stage of e-government?. *Transforming Government: People, Process and Policy*, 1(1), 44-58.
- Salam, A.F., Rao, H.R., and Pegels, C.C. (2003). 'Consumer-perceived risk in e-commerce transactions', *Communications of the ACM*, 46(12), pp.325-331.
- Sang, S., Lee, J. and Lee, J. (2009). 'E-government adoption in ASEAN: the case of Cambodia', *Internet Research*, 19(5), pp.517-534.
- Saunders, M.N., Saunders, M., Lewis, P. and Thornhill, A. (2011). *Research methods for business students*. 5th edn. Pearson Education India.
- Schaupp, L.C. and Carter, L. (2010) 'The impact of trust, risk and optimism bias on e-file adoption', *Information Systems Frontiers*, 12(3), pp.299-309.
- Schaupp, L.C., Carter, L. and McBride, M.E. (2010). 'E-file adoption: A study of US taxpayers' intentions', *Computers in Human Behavior*, 26(4), pp.636-644.
- Sekaran, U., (2003). *Research Methods for Business: A Skill Building Approach*. 4th edn. John Wiley and Sons, Inc: New York
- Sepp, M., Liljander, V., and Gummerus, J. (2011). 'Private bloggers' motivations to produce content-a gratifications theory perspective', *Journal of Marketing Management*, 27(13-14), pp.1479-1503.
- Seybert, H. (2011). 'Internet use in households and by individuals in 2011', Eurostat statistics in focus, vol. 66.
- Shah, D. V., McLeod, J. M., and Yoon, S. H. (2001). 'Communication, Context, and Community An Exploration of Print, Broadcast, and Internet Influences', *Communication Research*, 28(4), pp.464-506.
- Shah, D., Schmierbach, M., Hawkins, J., Espino, R., and Donavan, J. (2002). 'Nonrecursive models of Internet use and community engagement: Questioning whether time spent online erodes social capital', *Journalism and Mass Communication Quarterly*, 79(4), pp.964-987.
- Shareef, M.A., Kumar, U., Kumar, V. and Dwivedi, Y.K. (2009). 'Identifying critical factors for adoption of e-government', *Electronic Government, an International Journal*, 6(1), pp.70-96.
- Shelley II, M. C., Thrane, L. E., & Shulman, S. W. (2006). 'Lost in cyberspace: Barriers to bridging the digital divide in e-politics', *International Journal of Internet and Enterprise Management*, 4(3), pp.228-243.

- Shih, Y. and Fang, K. (2004) 'The use of a decomposed theory of planned behavior to study Internet banking in Taiwan', *Internet Research*, 14(3), pp.213-223.
- Shin, D.H. (2009) 'Determinants of customer acceptance of multi-service network: An implication for IP-based technologies', *Information and Management*, 46(1), pp.16-22.
- Siau, K., and Long, Y. (2005). 'Synthesizing e-government stage models - A meta-synthesis based on meta-ethnography approach', *Industrial Management and Data Systems*, 105(4), pp.443-458.
- Siau, K., and Shen, Z. (2003). 'Building customer trust in mobile commerce', *Communications of the ACM*, 46(4), pp.91-94.
- Sidorova, A., Evangelopoulos, N., Valacich, J.S. and Ramakrishnan, T. (2008). 'Uncovering the intellectual core of the information systems discipline', *MIS Quarterly*, 32(3), pp.467-482.
- Sipior, J.C., Ward, B.T. and Connolly, R. (2011). 'The digital divide and t-government in the United States: using the technology acceptance model to understand usage', *European Journal of Information Systems*, 20(3), pp.308-328.
- Song, I., Larose, R., Eastin, M. S., and Lin, C. A. (2004). 'Internet gratifications and Internet addiction: On the uses and abuses of new media', *Cyber Psychology and Behavior*, 7(4), pp.384-394.
- Song, J., and Zahedi, F. M. (2005). 'A theoretical approach to web design in e-commerce: a belief reinforcement model', *Management Science*, 51(8), pp.1219-1235.
- Sorrentino, M. and Niehaves, B. (2010). 'Intermediaries in E-Inclusion: A Literature Review', *Proceedings of the 43rd Hawaii International Conference on System SciencesIEEE Computer society*, pp.1-10.
- Sorrentino, M., and Niehaves, B. (2010, January). 'Intermediaries in E-Inclusion: A literature review', *In System Sciences (HICSS), 2010 43rd Hawaii International Conference on. IEEE*. pp.1-10.
- Stafford, T. and Stafford, M. (2001). 'Identifying Motivations for the Use of Commercial Web Sites', *Information Resources Management Journal*, [Online], 14(1), pp.13 November 2013. Available from: <http://www.igi-global.com.v-ezproxy.brunel.ac.uk:2048/gateway/article/1194?cb=true>.
- Stafford, T. F., Stafford, M. R., and Schkade, L. L. (2004). 'Determining uses and gratifications for the Internet', *Decision Sciences*, 35(2), pp.259-288.
- Stafford, T.F., Stafford, M.R. and Schkade, L.L. (2004). 'Determining uses and gratifications for the Internet', *Decision Sciences*, 35(2), pp.259-288.
- Straub, D. W., Gefen, D. and Boudreau, M. C. (2005). Quantitative Research. *In Research in Information Systems: A Handbook for Research Supervisors and their Students*. Avison, D. and Pries-Heje, J. (Ed.), Elsevier, Amsterdam
- Susanto, T.D. and Goodwin, R. (2010). 'Factors influencing citizen adoption of SMS-based eGovernment services', *Electronic journal of e-government*, 8(1), pp.55-71.
- Susanto, T.D. and Goodwin, R. (2013). 'User acceptance of SMS-based e-government services: Differences between adopters and non-adopters', *Government Information Quarterly*, 30(4), pp.486-497.
- Sweeney, A.D. (2008). 'Electronic government-citizen relationships: Exploring citizen perspectives', *Journal of Information Technology and Politics*, 4(2), pp.101-116.
- Tabachnick, B.G. and Fidell, L.S. (2001) '*Using multivariate statistics*', .

- Taylor, S. and Todd, P. (1995). 'Assessing IT usage: The role of prior experience', *MIS quarterly*, pp.561-570.
- Taylor, S. and Todd, P. (1995). 'Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions', *International journal of research in marketing*, 12(2), pp.137-155.
- Teo, T.S., Srivastava, S.C. and Jiang, L. (2008). 'Trust and electronic government success: an empirical study', *Journal of Management Information Systems*, 25(3), pp.99-132.
- Timmers, P. (2008). 'EU e-inclusion policy in context', *Info*, 10(5/6), pp.12-19.
- Tolbert, C. J., and McNeal, R. S. (2003). 'Unraveling the effects of the internet on political participation?', *Political research quarterly*, 56(2), pp.175-185.
- Tolbert, C.J. and Mossberger, K. (2006). 'The Effects of E_Government on Trust and Confidence in Government', *Public administration review*, 66(3), pp.354-369.
- Tornatzky, L., and Klein, K. (1982). 'Innovation characteristics and innovation adoption implementation: A meta-analysis of findings', *IEEE Transactions on Engineering Management*, 29(1), pp.28-45.
- Torres, L., Pina, V. and Royo, S. (2005). 'E-government and the transformation of public administrations in EU countries: Beyond NPM or just a second wave of reforms?', *Online Information Review*, 29(5), pp.531-553.
- Udo, G., Bagchi, K., and Kirs, P. (2008). 'Assessing web service quality dimensions: The E-servperf approach', *Issues in Information Systems*, 11(2), pp.313-322.
- Ueltschy, L. C., Krampf, R. F., and Yannopoulos, P. (2004). 'A cross-national study of perceived consumer risk towards online (Internet) purchasing', *Multinational Business Review*, 12(2), pp.59-82.
- Ullman, J., and Bentler, P. (2007). *Structural Equation Modelling*. In: B.G. John Wiley & Sons, Inc.
- United Nations (2002). *Benchmarking e-government: A global perspective*. New York:
- Uslaner, E. M. (2004). Trust, civic engagement, and the Internet. *Political Communication*, 21(2), pp.223-242.
- V. Shah, Nojin Kwak, R. Lance Holbert, D. (2001). "Connecting" and "disconnecting" with civic life: Patterns of Internet use and the production of social capital', *Political communication*, 18(2), pp.141-162.
- Valente, T. (1995). *Network Models of the Diffusion of Innovations*, New York: Hampton Press.
- Van der Meer, A., and Van Winden, W. (2003). 'E-governance in cities: a comparison of urban information and communication technology policies', *Regional Studies*, 37(4), pp.407-419.
- Van Dijk J. (1999). *The Network Society, Social aspects of new media*. London, Thousand Oaks, New Delhi: Sage, 267 p.
- Van Dijk, J. (2006). 'Digital divide research, achievements and shortcomings', *POETICS*, 34(4-5), pp.221-235.
- Van Dijk, J. and Hacker, K. (2003). 'The digital divide as a complex and dynamic phenomenon', *The information society*, 19(4), pp.315-326.

- Van Dijk, J.A., Peters, O. and Ebbers, W. (2008). 'Explaining the acceptance and use of government Internet services: A multivariate analysis of 2006 survey data in the Netherlands', *Government Information Quarterly*, 25(3), pp.379-399.
- Van Dijk, J.A.G.M. (2005). *The deepening divide: Inequality in the information society*, Sage Publications, Inc.
- Van Slyke, C., Belanger, F., and Comunale, C.L. (2004). 'Factors influencing the adoption of web-based shopping: The impact of trust', *Database for Advances in Information Systems*, 35(2), pp.32-49.
- Van Winden, W. (2001). 'The end of social exclusion? On information technology policy as a key to social inclusion in large European cities', *Regional Studies*, 35(9), pp.861-877.
- Vassilakis, C., Lepouras, G. and Halatsis, C. (2007). 'A knowledge-based approach for developing multi-channel e-government services', *Electronic Commerce Research and Applications*, 6(1), pp.113-124.
- Venkatesh, V. and Brown, S.A. (2001). 'A longitudinal investigation of personal computers in homes: adoption determinants and emerging challenges', *MIS quarterly*, pp.71-102.
- Venkatesh, V., Brown, S.A. and Bala, H. (2013). 'Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems', *MIS Quarterly*, 37(1), pp.21-54.
- Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003). 'User acceptance of information technology: Toward a unified view', *MIS quarterly*, pp.425-478.
- Verdegem, P. (2011). 'Social media for digital and social inclusion: challenges for information society 2.0 research and policies. tripleC: Communication, Capitalism and Critique', *Open Access Journal for a Global Sustainable Information Society*, 9(1), pp.28-38.
- Verdegem, P. and Verhoest, P. (2008). 'The 'relative utility' approach for stimulating ICT acceptance: profiling the non-user', *European Journal of ePractice*, 3, pp.36-46.
- W Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications. Incorporated.
- Walliman, N. (2006). *Social research methods*. Sage.
- Walsham, G. (2006) 'Doing interpretive research', *European journal of information systems*, 15(3), pp.320-330.
- Wang, Y.D. and Emurian, H.H. (2005). 'An overview of online trust: Concepts, elements, and implications', *Computers in Human Behavior*, 21(1), pp.105-125.
- Wang, Y.S. and Y.W. Shih, 2008. 'Why do people use information kiosk? A validation of the unified theory of acceptance and use of technology', *Government Inform. Q.*26, pp.158-165.
- Wang, Y-S., and Shih, Y-W. (2009). 'Why do people use information kiosks: A validation of the Unified Theory of Acceptance and Use of Technology', *Government Information Quarterly*, 26(1), pp.158-165.
- Warf, B. (2013). 'Contemporary digital divides in the United States', *Tijdschrift voor economische en sociale geografie*, 104(1), pp.1-17.
- Warkentin, M., Gefen, D., Pavlou, P.A. and Rose, G.M. (2002). 'Encouraging citizen adoption of e-government by building trust', *Electronic markets*, 12(3), pp.157-162.

- Warschauer, M. (2003). *Technology and Social Inclusion: Rethinking the Digital Divide*. MIT Press. Cambridge, MA.
- Warschauer, M. (2004). Technology and social inclusion: Rethinking the digital divide, *the MIT Press*.
- Wasserman, I. M., and Richmond_Abbott, M. (2005). 'Gender and the Internet: Causes of variation in access, level, and scope of use', *Social science quarterly*, 86(1), pp.252-270.
- Webster, F. (2006). The information society revisited. *The Handbook of New Media: Social Shaping and Social Consequences of ICTs, Londres, Sage*, pp.443-457.
- Weerakkody, V., Dwivedi, Y.K., El-Haddadeh, R., Almuwil, A. and Ghoneim, A. (2012) 'Conceptualizing E-Inclusion in Europe: An Explanatory Study', *Information Systems Management*, vol. 29, no. 4, pp. 305-320.
- Weerakkody, V., El-Haddadeh, R., Sabol, T., Ghoneim, A. and Dzapka, P. (2012). 'E-government implementation strategies in developed and transition economies: A comparative study', *International Journal of Information Management*, 32(1), pp.66-74.
- Weiser, E.B. (2001). 'The functions of Internet use and their social and psychological consequences', *CyberPsychology and Behavior*, 4(6), pp.723-743.
- Welch, E.W., Hinnant, C.C. and Moon, M.J. (2005). 'Linking citizen satisfaction with e-government and trust in government', *Journal of Public Administration Research and Theory*, 15(3), pp.371-391.
- West, D.M. (2004). 'E_Government and the Transformation of Service Delivery and Citizen Attitudes', *Public administration review*,64(1), pp.15-27.
- Wolfenbarger, M., and Gilly, M. C. (2001). 'Shopping online for freedom, control, and fun', *California Management Review*, 43(2), pp.34-55.
- Wright, D. and Wadhwa, K. (2010). 'Mainstreaming the e-excluded in Europe: strategies, good practices and some ethical issues', *Ethics and Information Technology*, 12(2), pp.139-156.
- Wu, I. L., and Wu, K. W. (2005). 'A hybrid technology acceptance approach for exploring e-CRM adoption in organizations', *Behaviour and Information Technology*, 24(4), pp.303-316.
- Xiaoni, Z., and Prybutok, V. (2005). 'A consumer perspective of e-service quality', *IEEE Transactions on Engineering Management*, 52(4), pp.461-477.
- Yulong, K., and Wenli, L. (2009). A study of the factors affecting the adoption of mobile instant messaging in China. *In Eighth International Conference on Mobile Business*, Dalian, Liaoning, China.
- Zikmund, W. and Babin, B. (2006). *Exploring marketing research*. Cengage Learning.
- Zikmund, W.G. (1994). *Business research methods*. 4th edn. New York, NY: The Dryden Press.
- Zillmann, D., and Bryant, J. (1985). 'Affect, mood, and emotion as determinants of selective exposure', *Selective exposure to communication*, pp.157-190.

APPENDIX A: QUESTIONNAIRE SURVEY

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**Brunel Business School****Research Ethics
Participant Information Sheet**

Dear participant,

The purpose of this survey is to gather information about peoples' experiences in using **Information Communication Technology (ICT) to access online services**, particularly those provided by the government. The outcome of this study will assist to define the critical factors that influence people's empowerment and participation in the knowledge society and economy through their access to ICT.

Please note that your participation in the survey is voluntary and will be treated in confidence. Your answers are valuable please take your time to answer the questions; there are no right or wrong answers and we would simply like to seek your opinion. The survey should take 20 minutes to complete.

In order to answer the survey you need to understand **the meaning of e-government** or **online government**. It is the employment of the Internet and the world-wide-web for **delivering government information and services to the citizens**. Examples of the services provided by the government to the citizens can be seen on the next page.

If you have any queries, please ask the person who handed out this questionnaire for advice.

THANK YOU IN ADVANCE FOR YOUR HELP

Ahlam Almuwil
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Do you agree to take part in this study? Yes No

Examples of online government services

Apply or Request	Book or Reserve	Pay it online	Report it	Have your say
<ul style="list-style-type: none"> ● Council tax - register ● Council tax - student discount ● Primary school places ● Secondary school places ● Garden waste bags ● Hillingdon First card ● Housing ● Jobs ● Licence or permit 	<ul style="list-style-type: none"> ● Appointment to register a birth, a death, a marriage or civil partnership ● Adult education courses ● Book a pitch for football, rugby or cricket ● Health and safety courses ● Internet or computer sessions - free! ● Library books - reserve or renew ● Theatre tickets ● Training courses 	<ul style="list-style-type: none"> ● Parking 'penalty charge notice' (PCN). ● Council Tax ● Rents ● Housing Benefits ● Business Rates ● Corporate Debtors ● Miscellaneous ● Housing Debtors ● Social Care Charges 	<ul style="list-style-type: none"> ● Report issues around your home or community, and check progress online. 	<ul style="list-style-type: none"> ● Have your say about what's happening in Hillingdon now. ● Petitions ● Submit and view current ePetitions. Results and reports ● Consultation results and what's happening as a result of your views. ● Engaging our community

(Source: Hillingdon council website available at: <http://www.hillingdon.gov.uk/index.jsp?articleid=5785>)

Have you ever accessed government information online? Yes No

Have you accessed any of the following government services online in the last 12 months (Please tick all that apply)?

<input type="checkbox"/> Council tax payment	<input type="checkbox"/> Apply for school places
<input type="checkbox"/> Inland revenue tax self-assessment	<input type="checkbox"/> Visit public library online
<input type="checkbox"/> Driving license exam booking or queries	<input type="checkbox"/> Any other services please specify
<input type="checkbox"/> Register to vote	<input type="checkbox"/> None of the above
<input type="checkbox"/> Registration with local GP	

Have you ever completed a government transaction over the Internet, including purchasing/payment (such as: Pay your parking 'penalty charge notice' (PCN) online, Pay for council tax, Pay rents, Pay housing benefits, Pay business rates, Pay social care charges, renew car tax with DVLA etc.) Yes No

Section 1: this section attempts to capture a profile of demographical information.		
1. Gender	<input type="checkbox"/> Male	<input type="checkbox"/> Female
2. Age group:	<input type="checkbox"/> Under 18	<input type="checkbox"/> 18-24 <input type="checkbox"/> 25-34 <input type="checkbox"/> 35-44 <input type="checkbox"/> 45-54 <input type="checkbox"/> 55-64 <input type="checkbox"/> 65-74 <input type="checkbox"/> 75 and over
3. Marital status:	<input type="checkbox"/> Single	<input type="checkbox"/> Partnered <input type="checkbox"/> Married <input type="checkbox"/> Separated <input type="checkbox"/> Divorced <input type="checkbox"/> Widowed
4. How many children under 16 years old live in your household?	<input type="checkbox"/> None	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 and more
5. Ethnicity:	<input type="checkbox"/> White <input type="checkbox"/> Black or Black British <input type="checkbox"/> Mixed	
	<input type="checkbox"/> Chinese <input type="checkbox"/> Asian or Asian British <input type="checkbox"/> Other	
6. Your employment status	<input type="checkbox"/> Full time <input type="checkbox"/> Part time <input type="checkbox"/> Retired	
	<input type="checkbox"/> Unemployed <input type="checkbox"/> Student	
7. Please indicate your annual household income		
<input type="checkbox"/> Less than £10,000 <input type="checkbox"/> £10,000 - £24,999 <input type="checkbox"/> £25,000 - £49,000 <input type="checkbox"/> £50,000 - £86,999		
<input type="checkbox"/> £87,000 - £99,999 <input type="checkbox"/> £100,000 - £149,999 <input type="checkbox"/> £150,000 - £299,999 <input type="checkbox"/> £300,000 and above		
8. What is your educational background?	<input type="checkbox"/> Primary	<input type="checkbox"/> Secondary <input type="checkbox"/> Undergraduate <input type="checkbox"/> Postgraduate <input type="checkbox"/> Other
9. Do you consider yourself to be disabled in any way?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
10. What is your primary language (i.e., the one you speak most of the time)?	<input type="checkbox"/> English	<input type="checkbox"/> Other
11. Which of the following best describes the area you live in?	<input type="checkbox"/> Urban "City"	<input type="checkbox"/> Suburban "Town" <input type="checkbox"/> Rural "Village"
12. How many computers are there in your home?	<input type="checkbox"/> None	<input type="checkbox"/> One <input type="checkbox"/> Two <input type="checkbox"/> More than two
13. Have you ever used a computer?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
14. How many years have you been using the computer?		
<input type="checkbox"/> 0 – 3 years <input type="checkbox"/> 4 – 6 years <input type="checkbox"/> 7 – 9 years <input type="checkbox"/> 10 or more years		
15a. Have you ever used the Internet?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
15b. In your opinion the main reason for NOT using the Internet is:		
<input type="checkbox"/> Privacy or security concern <input type="checkbox"/> Not useful, not interesting <input type="checkbox"/> Lack of skills <input type="checkbox"/> Lack of access <input type="checkbox"/> Cost		
16. Do you use the Internet or go online from any of these locations (please tick all that applies)?		
<input type="checkbox"/> Home <input type="checkbox"/> Work <input type="checkbox"/> An Internet café <input type="checkbox"/> A public library		
<input type="checkbox"/> School/college <input type="checkbox"/> A community centre or organisation <input type="checkbox"/> Other (please specify)		
17. What is your primary computing platform? <input type="checkbox"/> PC <input type="checkbox"/> Smart phone <input type="checkbox"/> Digital TV <input type="checkbox"/> Other		
18. How often do you purchase a product or service online?		
<input type="checkbox"/> Everyday <input type="checkbox"/> Several times a week <input type="checkbox"/> Several times a month <input type="checkbox"/> Less than once a month <input type="checkbox"/> Never		
19. How often do you use the Internet for social networking, email or any other online communication?		
<input type="checkbox"/> Everyday <input type="checkbox"/> Several times a week <input type="checkbox"/> Several times a month <input type="checkbox"/> Less than once a month <input type="checkbox"/> Never		
20. Do you have Internet access at home?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
21. What type of Internet access do you have at home?		
<input type="checkbox"/> Dial-up <input type="checkbox"/> DSL <input type="checkbox"/> Broadband (Cable Modem)		
<input type="checkbox"/> Wireless <input type="checkbox"/> Other		
22. Are you familiar with the online services provided by UK government or your Borough and their benefits to you?		
<input type="checkbox"/> I am familiar with both the services AND their benefits.	<input type="checkbox"/> I am familiar with the services BUT NOT their benefits	
<input type="checkbox"/> I am familiar with NEITHER the services NOR their benefits		
23. What are the main factors motivates/will motivate you to interact with government services online? (please tick all that apply)		
<input type="checkbox"/> Self-satisfaction <input type="checkbox"/> Personal interest <input type="checkbox"/> Social factors		
<input type="checkbox"/> Job opportunities <input type="checkbox"/> Time saving <input type="checkbox"/> Money saving		
24. What benefits do you think you gain/will gain from using online services provided by government? (please tick all that apply)		
<input type="checkbox"/> Convenience <input type="checkbox"/> Time saving <input type="checkbox"/> Money saving		
<input type="checkbox"/> Find needed	<input type="checkbox"/> Other	<input type="checkbox"/> None
25. Do you think you can use computer/Internet on your own to access online services provided by government or do you		

<input type="checkbox"/> On my own	<input type="checkbox"/> Need	<input type="checkbox"/> Sometimes need	<input type="checkbox"/> Prefer not to ask for assistance
26. How often do you use the Internet to gather information about or from the government?			
<input type="checkbox"/> Everyday	<input type="checkbox"/> Several times a week	<input type="checkbox"/> Several times a month	<input type="checkbox"/> Less than once a month <input type="checkbox"/> Never
27. Have you ever participate in political activities at local/national/international level? <input type="checkbox"/> Yes <input type="checkbox"/> No			
28. Have you ever shared personal expression in political area throughout blog, chat, profiles on social networks?			
29. How do you rate your current computer skills level? <input type="checkbox"/> Proficient <input type="checkbox"/> Intermediate <input type="checkbox"/> Beginner <input type="checkbox"/> Poor			
30. How do you rate your current Internet skills level? <input type="checkbox"/> Proficient <input type="checkbox"/> Intermediate <input type="checkbox"/> Beginner <input type="checkbox"/> Poor			

Section 2: This section is to assess your opinion of online government services. Please rate the following statements on a scale of 1 – 7: 1 = Strongly disagree, 2 = Disagree, 3= Somewhat disagree, 4 =Neither, 5 = Somewhat agree , 6= Agree, 7= Strongly Agree

1. Online government services are (would be) easy to use.	1	2	3	4	5	6	7
2. Learning to use online government services is (would be) easy for me.	1	2	3	4	5	6	7
3. I would find it easy to use online government services to do what I want to do.	1	2	3	4	5	6	7
4. It would be easy for me to become skilful at using online government services.	1	2	3	4	5	6	7
5. I would find online government services useful for me.	1	2	3	4	5	6	7
6. Using e- Government services (would) make me more efficient.	1	2	3	4	5	6	7
7. Using online government services (would) make my life easier.	1	2	3	4	5	6	7
8. Using online government services would save time and it is important to me.	1	2	3	4	5	6	7
9. Using online government services has more advantages than traditional methods and this is important to me.	1	2	3	4	5	6	7
10. Using the online government services will fit well with the way I work.	1	2	3	4	5	6	7
11. Using the online government services would fit into my lifestyle.	1	2	3	4	5	6	7
12. The setup of online government services will be compatible with the way I work.	1	2	3	4	5	6	7
13. I like virtual interaction with e-government website better than personal interaction with physical offices.	1	2	3	4	5	6	7
14. I have access to hardware (e.g. computer, smart phone) to use online government services.	1	2	3	4	5	6	7
15. I have access to software needed to use online government	1	2	3	4	5	6	7
16. I have access to Internet service needed to use online government services.	1	2	3	4	5	6	7
17. I have the resources, knowledge and ability to buy a computer/smart phone.	1	2	3	4	5	6	7
18. I have the resources, knowledge and ability to pay for Internet connection.	1	2	3	4	5	6	7
19. I would be able to pay for online government services.	1	2	3	4	5	6	7
20. I would feel comfortable using online government services on my own.	1	2	3	4	5	6	7
21. I would be able to use online government services reasonably well on my own.	1	2	3	4	5	6	7
22. I have the skills needed for using e-Government websites.	1	2	3	4	5	6	7
23. I have qualifications to use and operate a computer and Internet.	1	2	3	4	5	6	7

24. I am confident of using e-Government websites.	1	2	3	4	5	6	7
25. I was constrained by the lack of resources needed to use e-government services.	1	2	3	4	5	6	7
26. Resources required to use online government services were available to me.	1	2	3	4	5	6	7
27. I have adequate computer technology at home/workplace/institution.	1	2	3	4	5	6	7
28. I always have access to a high-speed internet connection at home/workplace.	1	2	3	4	5	6	7
Section 3: This section is seeking to assess external and internal Influence Please rate the following statements on a scale of 1 – 7: 1 = Strongly disagree, 2 = Disagree, 3= Somewhat disagree, 4 =Neither, 5 = Somewhat agree , 6= Agree, 7= Strongly Agree							
1. My peers/colleagues/friends thought I should use online government services.	1	2	3	4	5	6	7
2. People I knew thought that using online government services is/was a good idea.	1	2	3	4	5	6	7
3. People I knew influenced me to try out online government services.	1	2	3	4	5	6	7
4. I read/saw news reports that using e-government services was a good way to interact with the government.	1	2	3	4	5	6	7
5. The popular press depicted a positive sentiment for using e-government services.	1	2	3	4	5	6	7
6. Mass media reports convinced me to use online government services.	1	2	3	4	5	6	7
7. Expert opinions depicted a positive sentiment for using e-Government services.	1	2	3	4	5	6	7
8. The government expects me to use e-government services.	1	2	3	4	5	6	7
9. The government thinks that I should use online government services.	1	2	3	4	5	6	7
10. Using online government services would be a good idea.	1	2	3	4	5	6	7
11. I like the idea of using online government services for forms-filling action.	1	2	3	4	5	6	7
12. I like the idea of using online government services for transactional services (secure online payment).	1	2	3	4	5	6	7
13. Using online government services would be a pleasant experience.	1	2	3	4	5	6	7
14. I would be able to use online government services well.	1	2	3	4	5	6	7
15. Using online government services was entirely within my control.	1	2	3	4	5	6	7
16. I have the resources, knowledge, and ability to use online government services.	1	2	3	4	5	6	7
17. People important to me (peers and experts) support my use of online government services.	1	2	3	4	5	6	7
18. People who influenced my behaviour wanted me to use online government services instead of any alternative means.	1	2	3	4	5	6	7
19. People whose opinions I valued preferred that I use e-government services.	1	2	3	4	5	6	7
20. I intend to use online government services within the next 3 months.	1	2	3	4	5	6	7
21. It is likely that I will use the online government services.	1	2	3	4	5	6	7
22. I expect to use the online government services.	1	2	3	4	5	6	7
23. I will regularly use the online government services in the future.	1	2	3	4	5	6	7
Section 4: this section is seeking to assess your Internet use.							
1. On average, how many hours do you spend per week using the Internet?							
<input type="checkbox"/> Less than an hour <input type="checkbox"/> Between 1-4 hours <input type="checkbox"/> Between 5-8 hours <input type="checkbox"/> Between 9-12 <input type="checkbox"/> Between 13-16 <input type="checkbox"/> More than							

2. How often do you use the Internet?							
<input type="checkbox"/> Less than once a month <input type="checkbox"/> Once a month <input type="checkbox"/> A few times a month <input type="checkbox"/> A few times a week <input type="checkbox"/> About once a day							
3. How do you consider the extent of your current Internet use?							
<input type="checkbox"/> No use at all <input type="checkbox"/> Rarely use <input type="checkbox"/> Occasional use <input type="checkbox"/> Neutral <input type="checkbox"/> Regular use <input type="checkbox"/> Heavy use <input type="checkbox"/> Addicted							
Section 5a: This section is seeking to assess your satisfaction with online government services. Please complete this section ONLY if you have used online government services. Please rate the following statements on a scale of 1 – 7: 1 = Strongly disagree, 2 = Disagree, 3= Somewhat disagree, 4 =Neither, 5 = Somewhat agree , 6= Agree, 7= Strongly Agree							
1. I am satisfied with the performance of e-Government services.	1	2	3	4	5	6	7
2. I am pleased with the experience of using the e-Government services.	1	2	3	4	5	6	7
3. My decision to use the e-Government service was a wise one.	1	2	3	4	5	6	7
4. My feeling with using e-Government service was better than traditional way.	1	2	3	4	5	6	7
5. Assuming that I have access to online government services, I intend to reuse it.	1	2	3	4	5	6	7
6. I will reuse online government services in the future.	1	2	3	4	5	6	7
7. I will frequently use online government services in the future.	1	2	3	4	5	6	7
Section 5b: This section is seeking to assess your satisfaction with Internet. Please rate the following statements on a scale of 1-7: 1 = Strongly disagree, 2 = Disagree, 3= Somewhat disagree, 4 =Neither, 5 = Somewhat agree , 6= Agree, 7= Strongly Agree							
1. I feel satisfied with the ease of use of the Internet/web.	1	2	3	4	5	6	7
2. I am satisfied with information on the Internet/web.	1	2	3	4	5	6	7
3. I am satisfied with online product and services.	1	2	3	4	5	6	7
4. I am satisfied with the prices on the Internet/web.	1	2	3	4	5	6	7
5. Overall, I am satisfied with the Internet/web.	1	2	3	4	5	6	7
6. Assuming that I have access to the Internet , I intend to reuse it.	1	2	3	4	5	6	7
7. I will reuse the Internet in the future.	1	2	3	4	5	6	7
8. I will frequently use the Internet in the future.	1	2	3	4	5	6	7
Section 6: The following questions assess how much you feel that a particular aspect of the Internet is important to you and what motivates/will motivate you to use the Internet and online government services. 1= Not at all important, 2= Low importance, 3= Slightly important, 4= Neutral, 5= Moderately important, 6= Very important, 7=Extremely important.							
1. Resources (online services and utilities that you use)	1	2	3	4	5	6	7
2. Search Engines	1	2	3	4	5	6	7
3. Searching (looking for specific information)	1	2	3	4	5	6	7
4. Surfing (browsing the web, not necessarily with a specific goal)	1	2	3	4	5	6	7
5. Technology (information technology; computer system that you access,	1	2	3	4	5	6	7
6. Website	1	2	3	4	5	6	7
7. Education	1	2	3	4	5	6	7
8. Information	1	2	3	4	5	6	7
9. Knowledge	1	2	3	4	5	6	7
10. Learning	1	2	3	4	5	6	7
11. Research	1	2	3	4	5	6	7
12. Chatting (live interaction)	1	2	3	4	5	6	7
13. Interaction (communication with people)	1	2	3	4	5	6	7
14. People (social interaction, in general)	1	2	3	4	5	6	7
Section 7: this section is seeking to assess your trust in Internet and online government services. Please rate the							
1. I think I can trust e-government websites.	1	2	3	4	5	6	7
2. The e-government website can be trusted to carry out online transactions faithfully.	1	2	3	4	5	6	7
3. In my opinion, e-government website is trustworthy.	1	2	3	4	5	6	7

4. I trust e-government to keep my best interests in mind.	1	2	3	4	5	6	7
5. The internet has enough safeguards to make me feel comfortable using it to interact with the e-government websites online.	1	2	3	4	5	6	7
6. I feel assured that legal and technological structures adequately protect me from problems on the internet.	1	2	3	4	5	6	7
7. In general, the internet is now a robust and safe environment in which to transact with the e-government websites.	1	2	3	4	5	6	7
8. The government takes full responsibility for any type of insecurity during interaction/transaction at the e-government website.	1	2	3	4	5	6	7
9. The e-government website is, overall, reliable.	1	2	3	4	5	6	7
10. What I do through the e-government website is guaranteed.	1	2	3	4	5	6	7
11. The e-government website is more reliable than physical government offices.	1	2	3	4	5	6	7
12. Legal and technological policies of the e-government adequately protect me from problems on the internet.	1	2	3	4	5	6	7
13. There is possibility of the online government services malfunctioning and not performing as it was designed and therefore failing to deliver the	1	2	3	4	5	6	7
14. There might be potential monetary outlay associated with using the online government services.	1	2	3	4	5	6	7
15. There is a possibility of losing time when using online government services to make an unsuccessful process for instance; form filling process or paying for any service.	1	2	3	4	5	6	7

