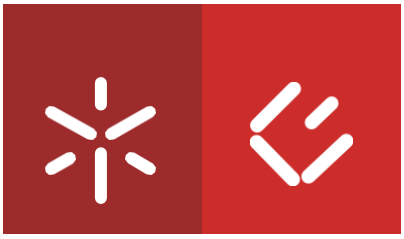
Universidade do Minho
Escola de Economia e Gestão

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THE CAUSES AND EFFECTS OF DIGITAL TRANSFORMATION: THE CASE OF THE UNITED ARAB EMIRATES (UAE)

July of 2025

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UMinho | 2025



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Doctoral Thesis
Doctorate in Administrative Sciences

Work carried out under the supervision of
Professor António Fernando Tavares
and
Professor Delfina Soares

July of 2025

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Acknowledgments

This dissertation is dedicated to the soul of my beloved father, who passed away almost eight years ago. His memory continues to guide and inspire me, and I know he would have been deeply proud to witness this accomplishment.

To my mother, whose eyes light up with pride each time I reach a new milestone—thank you for your unconditional love and for always believing in my abilities. Your encouragement has been a driving force throughout my journey.

I am profoundly grateful to my wife for her steadfast support and unwavering patience during this challenging period. She has endured hardships alongside me, and her strength has been my anchor every step of the way. To my two young daughters, you are my greatest inspiration. I strive every day to be a role model for your education and future success, and I hope my dedication to this work will encourage you to pursue your dreams with passion and resilience.

To my sister, with whom I share not only family traits but also a deep friendship, shared beliefs, and mutual support, thank you for always standing by me and cheering me on through every challenge.

Finally, I extend my sincere gratitude to all those who have supported and believed in me throughout this journey. Your encouragement, guidance, and faith have been invaluable, and I am truly grateful for your presence in my life. This achievement is as much yours as it is mine.

STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

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Resumo

Esta tese de doutoramento explora a complexa relação entre a transformação digital do governo e a confiança dos cidadãos no governo, juntamente com a sua satisfação com a prestação de serviços nos Emirados Árabes Unidos (EAU). Embora os EAU ocupem o 11º lugar no relatório da OCDE de 2024, evidenciando a sua liderança global no desenvolvimento do governo digital, existe uma notável escassez de estudos empíricos que aprofundem as dinâmicas entre as iniciativas digitais e as perceções dos cidadãos. Esta investigação aborda esta lacuna formulando um quadro conceptual abrangente que ilustra a intrincada interação entre os esforços de transformação digital, a confiança dos cidadãos e a satisfação, tudo isto no contexto do panorama sociocultural e tecnológico distinto dos EAU.

Adotando uma abordagem inovadora de dupla perspetiva, o estudo analisa estas relações tanto do ponto de vista dos cidadãos como dos decisores políticos. Integra conhecimentos da literatura de Administração Pública, focando-se na transformação governamental baseada nas Tecnologias da Informação e Comunicação (TIC), na confiança dos cidadãos e na satisfação com os serviços. A investigação examina como a transformação digital influencia a confiança e a satisfação dos cidadãos, analisando as causas e efeitos subjacentes a estas relações. Investiga a interação entre tecnologia, desempenho, responsabilidade, transparência e perceções dos cidadãos, posicionando a transformação digital como um mediador crítico.

Através de uma análise empírica rigorosa, o estudo revela relações significativas entre estes construtos, incluindo uma influência bidirecional entre confiança e satisfação. Os resultados contribuem para uma compreensão mais profunda da interligação das perceções dos cidadãos e do seu impacto no sucesso das iniciativas de governo digital. Esta investigação não só oferece informações valiosas para os decisores políticos, como também estabelece uma base para futuros estudos no domínio em rápida evolução da governação digital.

Palavras-chave: Administração Pública; Confiança dos cidadãos; Emirados Árabes Unidos (EAU); Governo digital; Responsabilização; Satisfação com os serviços; Transformação digital

Abstract

This doctoral thesis explores the complex relationship between digital government transformation and citizens' trust in government, along with their satisfaction with service provision in the United Arab Emirates (UAE). While the UAE ranks 11th in the OECD 2024 report, signifying its global leadership in digital government development, there is a notable scarcity of empirical studies that delve into the dynamics between digital initiatives and citizen perceptions. This research addresses this gap by formulating a comprehensive conceptual framework that illustrates the intricate interplay among digital transformation efforts, citizen trust, and satisfaction, all within the UAE's distinct socio-cultural and technological landscape.

Adopting a novel dual-perspective approach, the study analyzes these relationships from both citizen and policymaker viewpoints. It integrates insights from the Public Administration literature, focusing on ICT-enabled government transformation, citizen trust, and service satisfaction. The research examines how digital transformation influences citizens' trust and satisfaction, examining the underlying causes and effects of these relationships. It investigates the interplay between technology, performance, accountability, transparency, and citizen perceptions, positioning digital transformation as a critical mediator.

Through rigorous empirical analysis, the study reveals significant relationships among these constructs, including a bidirectional influence between trust and satisfaction. The findings contribute to a deeper understanding of the interconnectedness of citizen perceptions and their impact on the success of digital government initiatives. This research not only offers valuable insights for policymakers but also lays a foundation for future studies in the rapidly evolving realm of digital governance.

Keywords: Accountability; Citizen trust; Digital government; Digital transformation; Public Administration; Service satisfaction; United Arab Emirates (UAE)

List of Abbreviations

ACSI	American Customer Satisfaction Index
AI	Artificial Intelligence
CFA	Confirmatory Factor Analysis
DGEP	Dubai Government Excellence Program
E-Government	Electronic Government
E-Participation	Electronic Participation
EFA	Exploratory Factor Analysis
EGDI	E-Government Development Index
EPI	E-Participation Index
GCC	Gulf Cooperation Council
GODI	Global Open Data Index
GTMI	Gov Tech Maturity Index
HCI	Human Capital Index
ICT	Information and Communications Technology
ODRI	Open Data Readiness Index
OECD	Organisation for Economic Co-operation and Development
OSI	Online Service Index
SDG	Sustainable Development Goals
SEM	Structural Equation Modelling
SPSS	Statistical Package for the Social Sciences
TIC	Tecnologias da Informação e Comunicação
TII	Telecommunication Infrastructure Index
UAE	United Arab Emirates
UN	United Nations

Table of Contents

COPYRIGHT AND CONDITIONS OF USE OF THE WORK BY THIRD PARTIES ii
Acknowledgments iii
STATEMENT OF INTEGRITY iv
Resumo v
Abstract vi
List of Abbreviations vii
Chapter 1: Introduction 1
1.1 Introduction 1
1.2 Research Background 1
1.3 Research Problem and Gap 4
1.4 Research Aim and Objectives 6
1.5 Significance of the Research 7
1.6 Research Outline 8
1.7 Chapter Summary 10
Chapter 2: Literature Review 11
2.1 Introduction 11
2.2 E-Government Transformation 11
2.3 Causes of Digital Government Transformation 16
2.3.1 Transparency and its Relationship with Transformation of Government 21
2.3.2 Accountability and its Relationship with Transformation of Government 23
2.3.3 Performance and its Relationship with Transformation of Government 25
2.4 Effects of Government Digital Transformation 26
2.4.1 Effects of Government Digital Transformation in Relation to Citizens Trust 27
2.4.2 Effects of Government Digital Transformation in Relation to Citizen's Satisfaction 29
2.5 UAE Digital Government and Citizens Trust and Satisfaction 31
2.6 Chapter Summary 36
Chapter 3: Conceptual Model 37
3.1 Introduction 37
3.2 Relationship between Technology and Digital Transformation of Government 37
3.3 Relationship between Transparency and Digital Transformation of Government 38
3.4 Relationship between Accountability and Digital Transformation of Government 40

3.5 Relationship between Positive Performance and Digital Transformation of Government 41
3.6 Relation between Digital Transformation of Government and Citizens' Trust in Government, as well as their Satisfaction with Service Delivery. 42
3.7 The Proposed Conceptual Model 45
3.8 Chapter Summary 46
Chapter 4: Research Methodology 47
4.1 Introduction 47
4.2 Research Philosophy 47
4.3 Research Design 49
4.3.1 Research Purpose 50
4.3.2 Unit of Analysis 51
4.3.3 Research Strategy 51
4.3.4 Time Dimension 52
4.3.5 Stages of the Research Process 53
4.4 Research Methods 56
4.4.1 Quantitative Analysis 57
4.4.2 Qualitative Analysis 57
4.4.3 Sampling Process 59
4.4.4 Target Population 59
4.4.5 Sampling Frame 59
4.4.6 Sampling Technique 59
4.4.7 Sample Size 61
4.4.8 Data Collection 61
4.5 Questionnaire and Interview 62
4.6 Questionnaire Development and Validation 63
4.6.1 Quantitative Method 63
4.6.2 Structure of the Questionnaire 65
4.6.3 Pre-Test 65
4.6.4 Pilot Survey 66
4.6.5 Main Survey 71
4.6.6 Qualitative Method 71
4.6.7 Semi-Structured Interview 74
4.6.8 Interview Participants 75
4.6.9 Thematic Model 76

4.7 Data Analysis 77
4.8 Chapter Summary 79
Chapter 5: Data Analysis 80
5.1 Introduction 80
5.2 Quantitative Analysis 81
5.2.1 Response Rate and Sampling Size 81
5.2.2 Profile of the Respondents 81
5.2.3 Factor Analysis 82
5.2.4 Reliability and Validity Analysis 83
5.2.5 Descriptive Statistics 84
5.2.6 Correlation Matrix 87
5.2.7 Normality of the Data 87
5.2.8 Confirmatory Factor Analysis 88
5.2.8.1 Measurement Model Fit 88
5.2.8.2 Standardized Loadings, Critical Ratios and R Squares 90
5.2.8.3 Construct Validity Assessment 92
5.2.9 Structural Equation Modelling 93
5.2.10 Path Analysis 94
5.3 Qualitative Analysis 96
5.3.1 Key Characteristics of the Interviewees 96
5.3.2 General Perceptions of Digital Government Implementation 96
5.3.3 Relation between Transparency and Digital Government Transformation 98
5.3.4 Relation between Accountability and Digital Government Transformation 99
5.3.5 Relation between Performance and Digital Government Transformation 100
5.3.6 Relation between Digital Government Transformation and Citizens Trust in Government 102
5.3.7 Relation between Digital Government Transformation and Citizen Satisfaction with the Provision of Government Services 103
5.3.8 Relationship between Citizen Trust in Government and Citizen Satisfaction with the Provision of Government Services 105
5.4 Chapter Summary 106
Chapter 6: Discussion 108
6.1 Introduction 108
6.2 Significance of the Empirical Findings 109
6.2.1 Overview of the Conceptual Model Findings 109

6.2.2 Overview of the Thematic analysis Findings 111
6.3 Answers to the Research Questions 112
6.3.1 Research Question Q1 112
6.3.2 Research Question Q2 & Q3 113
6.4 Results of the Hypotheses Testing 115
6.4.1 H1a: Technology influences digital transformation of government 115
6.4.2 H2a: Transparency influences digital transformation of government. 116
H2b: Digital transformation influences transparency in government 116
6.4.3 H3a Accountability influences digital transformation of government. 117
H3b Digital transformation of government influences accountability 117
6.4.4 H4a Positive performance influences digital transformation of government. 117
H4b Digital transformation of government influences positive performance. 117
6.4.5 H5a Digital transformation of government positively influences citizens satisfaction with service provision. 118
6.4.6 H5b Digital transformation of government positively influences trust in government. 119
6.4.7 H5c Digital transformation influences trust in government mediated by satisfaction in government & H5d Digital transformation affects satisfaction with government mediated by trust. 121
6.5 Thoughts on the Empirical Findings 122
6.6 Chapter Summary 124
Chapter 7: Conclusion 125
7.1 Introduction 125
7.2 Research Overview 125
7.3 Theoretical Contributions 126
7.4 Policy and Practice Implications 127
7.5 Research Limitations 131
7.6 Future Research 132
7.7 Revisiting the Aim and Objectives of the Research 134
7.8 Long-Term Sustainability and Strategic Challenges in Government Digital Transformation: Navigating Future Complexities 135
7.9 Chapter Summary 137
References 138
Appendices 154
Appendix 1 – Research Instruments (First Attempt) 154
Appendix 2 – Research Instruments (Pre-Pilot Test) 155
Appendix 3 – Research Instruments (Pilot Survey) 157

Appendix 4 – Research Instruments (Main Survey) 158
Appendix 5 – Hypotheses Tested 160
Appendix 6 – Coding to Themes 161

List of Figures

Figure 2.1 Accelerating Digital Transformation for Sustainable Development, 13th Edition of the UN E-Government Survey 2024 13
Figure 2.2 The Global Average E-Government Development Index (EGDI), UN E-Government Survey 2024 14
Figure 2.3 Development of Open Government, UN E-Government Survey 2024 15
Figure 2.4 The Global Average E-Government Development Index (EGDI), UN E-Government Survey 2024 34
Figure 3 Proposed Hypotheses Framework 45
Figure 4.1 Stages of the Research Process 55
Figure 4.2 Types of Sampling Technique (Islam & Aldaihani, 2022) 60
Figure 4.3 Types of Questionnaires (McIntosh & Morse, 2015) 62

List of Tables

Table 4.1 Questionnaire Development Phases 64
Table 4.2 Research Questions and Evidence from the Literature 66
Table 4.3 Summary of Reliability and Validity Analyses (before deleting & modifying questions) 69
Table 4.4 Summary of Reliability and Validity Analyses (after deleting and modifying Q7 and Q12) 70
Table 4.5 Main Survey - Research Questions 71
Table 4.6 Semi-structured Questionnaire 72
Table 4.7: Participants' sample characteristics 76
Table 5.1 Participants Profile 82
Table 5.2 Values for Reliability and Validity Assessment 83
Table 5.3 Reliability and Validity Assessment 84
Table 5.4 Descriptive Statistics 85
Table 5.5 Mean, Std. Deviation and Correlation 87
Table 5.6 Parameters for Skewness and Kurtosis 87
Table 5.7 Results of Skewness and Kurtosis Test 88
Table 5.8 Recommended Levels for Fit Indices 89
Table 5.9 Values for Fit Indices 90

Table 5.10 Recommended Values for Standardized Loadings, C.R, SMC 90
Table 5.11 Values for Standardized Loadings, C.R, SMC 91
Table 5.12 Recommended Values for AVE and CR 93
Table 5.13 AVE and CR Values of the Measurement Model 93
Table 5.14 Path Analysis Results 94
Figure 5.1 Path Analysis Results 95
Table 6.1 Path Analysis Results 109
Table 7.1 Meeting the Aim and Objectives of the Research 134

Chapter 1: Introduction

1.1 Introduction

Chapter one establishes the research foundation by outlining its rationale, research questions, objectives, and the rationale for selecting the United Arab Emirates as the study context. The chapter contributes to the existing body of knowledge by identifying a research gap and outlining the study's methodological approach. To investigate the complex relationship between digital government transformation and citizen perceptions, a mixed-methods design was employed, combining an online survey of UAE residents with semi-structured interviews of policymakers. Quantitative data was analyzed using Structural Equation Modelling (SEM), including Confirmatory Factor Analysis (CFA) and path analysis, while qualitative data was subjected to thematic analysis.

1.2 Research Background

Digital government, also known as e-government, has emerged as a central focus of public policy agendas in developed and developing nations, driven by its potential to enhance service delivery across multiple government sectors. The integration of information and communication technology (ICT) into government operations has played a crucial role in this evolution, establishing it as a fundamental element of technological progress in the public sector.

While technology is not a universal solution for all governmental challenges, it has undeniably become a cornerstone of public sector modernization. ICT is instrumental in the delivery of contemporary public services, influencing the development of the information society and emerging economy. By driving public sector transformation, ICT empowers governments to address future administrative pressures effectively.
Governments worldwide recognize digital technology as a powerful instrument for enhancing public administration efficiency and effectiveness. The adoption of digital government has necessitated a comprehensive re-evaluation of organizational structures, responsibilities, and collaborative arrangements across government levels. This shift towards a whole-of-government approach to service delivery underscores the transformative potential of digital technologies in modern governance (Ahn & Chen, 2022).

A primary objective of early digital government implementations was to enhance government responsiveness to citizen and business needs. By focusing on improving service delivery, these initiatives aimed to increase citizen satisfaction and enhance trust in government (Karanasios, 2011; Alkraiji & Ameen, 2022). The integration of ICT was instrumental in modernizing government operations and creating more accessible, efficient, and effective service delivery channels (Garson, 2006; Malodia, Dhir, Mishra & Bhatti, 2021).

Therefore, depending on the previous studies, it might be reasonable to expect that investing in digital government transformation and developing government services would lead to increased citizens' trust and satisfaction, especially given the significant spending on worldwide electronic or digital government initiatives - for example, the cost of e-government as of 2014 in the United States was 36.65 billion dollars since 1992, in South Korea it was 1.6 billion dollars since 2003 and it was 0.18 billion dollars in Russia since 2002 (Mukhoryanova, 2016). E-government spending in the UK for the year 2021 was $12.2 billion (Ferry & Eckersley, 2022), while it was $1.39 billion in India in 2020 (Maiti, Castellacci & Melchior, 2020). As per the digital governance project database released by the World Bank in January 2017, 1,129 investment-lending projects have been funded by the World Bank in 135 countries around the globe since 1995 with a total amount of $ 292,677 million. Despite these large-scale investments, the literature shows that citizens trust in and satisfaction with government does not meet expectations and further e-participation in digital services is still considered a main challenge as highlighted by the United Nations E-Government Survey 2020, 2022, and 2024 (United Nations Department of Economic and Social Affairs).

Previous research has explored the relationship between digital government and citizen trust and satisfaction (Morgeson, 2011; Teo, 2008; Tolbert and Mossberger, 2006, Alkraiji, A., & Ameen, N. 2022). The focus has been on technical aspects of implementation, such as service quality, usability, and adoption. Despite significant investments in digital government and associated digital transformation projects, the anticipated improvements in citizen trust and satisfaction have not been fully realized (UN E-Government Survey Reports, 2018, 2020, 2022 and 2024). This gap highlights the need for a more comprehensive understanding of the factors influencing the success of digital government initiatives and their impact on citizen perceptions. Several scholars—including Bannister and Connolly (2011), Gunawong and Gao (2017), Kim (2009), Miyata (2011), Morgeson (2011), Omar (2017), Rodríguez Bolívar (2016), and Weerakkody (2009)—emphasize that genuine government transformation goes beyond surface level changes. It demands a fundamental rethinking and restructuring of core governmental functions and processes to ensure that citizens experience meaningful and measurable improvements.

Despite widespread declines in citizen trust and satisfaction in government, accompanied by substantial investments in digital government initiatives (Edwards, 2015; Bannister and Connolly, 2011; Hong, 2013; Morgeson, 2011; Myeong, 2014; Andersen, K. N., Henriksen, H. Z., Medaglia, R., Danziger, J. N., Sannarnes, M. K., & Enemærke, M. 2010 and Pérez-Morote, R., Pontones-Rosa, C., & Núñez-Chicharro, M. 2020), certain countries have demonstrated the capacity to reverse this trend through successful digital government implementation. This divergence in outcomes underscores the importance of identifying the factors that contribute to positive citizen perceptions. By examining the experiences of these countries, researchers can gain valuable insights into the strategies and policies that foster trust and satisfaction in the digital age.

This study examines the United Arab Emirates (UAE) as a significant case for investigating the relationship between digital government transformation and citizen trust and satisfaction. The UAE's rapid advancement in the global digital government landscape is evidenced by its top-tier rankings in the United Nations E-Government Development Index (EGDI) for both 2022 and 2024. Specifically, the UAE achieved first place in the Arab region and thirteenth globally in the 2022 report, followed by second in the region and eleventh globally in 2024. This notable positioning in the world rankings underscores the UAE's leadership in digital governance.

The UAE has attained the highest rating of 'Very High' in the EGDI, reflecting exceptional progress in developing its digital government infrastructure. Additionally, its prominent standing in the 'Content Provision' and 'Institutional Framework' sub-indices of the Online Service Index (OSI) highlights its strengths in delivering accessible public information and establishing robust governance structures for digital transformation. The 'Content Provision' index assesses the availability of online public information, while the 'Institutional Framework' evaluates strategic planning, organizational structure, legal frameworks, and open data policies.

The UN E-Government Survey 2022 emphasizes the critical role of digital government in advancing the 2030 Sustainable Development Goals (SDGs) and addressing global challenges such as the COVID-19 pandemic. The UAE's accomplishments in these domains serve as a model for other nations seeking to leverage digital technologies for public benefit. Furthermore, findings from the 2022 Gov Tech Maturity Index (GTMI) report illustrate that the UAE's comprehensive approach to digital government transformation has produced significant outcomes. By prioritizing enhancements in service delivery, citizen engagement, and foundational systems, the UAE exemplifies a successful model for countries aiming to utilize technology for public good. Its ongoing commitment to improving digital services aligns with broader objectives of promoting sustainable development and effectively addressing contemporary challenges faced by governments worldwide.

1.3 Research Problem and Gap

Existing research has explored the relationship between digital government and citizen trust and satisfaction, primarily focusing on the technical dimensions of ICT-enabled transformation projects, such as service quality, usability, and adoption. While these studies have contributed to the understanding of digital government implementation, they have often overlooked the broader contextual factors influencing citizen perceptions and the extent to which digital government initiatives can truly transform core government functions. Consequently, there remains a gap in knowledge regarding the causal relationship between digital government, government transformation, and citizen outcomes.

The decline in public trust in government and the failure of various e-government initiatives have generated significant attention from researchers, given their crucial role in shaping citizens' perceptions and behaviours toward their governments (Prats, Phillips & Smid, 2023). Previous studies have often focused on isolated aspects of citizens' experiences with digital government, neglecting the inherent complexities and the potential interplay among the multiple factors that shape these experiences (Morgeson, 2011). Moreover, the literature reveals a lack of consensus on a standardized set of factors contributing to the existence of trust and satisfaction in government (Bannister & Connolly, 2011; West, 2004; Grimmelikhuijsen & Knies, 2017). Several factors have been identified as influencing citizens' trust and satisfaction, including technology (Morgeson, 2011; Tolbert & Mossberger, 2006), transparency (Bannister & Connolly, 2011; Kim, 2009), accountability (Bannister & Connolly, 2011; Kim, 2009), government performance (Bouckaert, 2005; Morgeson, 2011; Van de Walle & Bouckaert, 2003; Van de Walle, 2008), and the broader transformation of government (Bannister & Connolly, 2011; Waller & Weerakkody, 2016; Zwahr, 2005). However, to the best of the author's knowledge, no study has systematically mapped the relationships among these factors to comprehensively understand their collective impact on citizens' trust in government and satisfaction with service provision.

While the literature acknowledges the interconnectedness of factors such as technology, transparency, and accountability in driving government transformation (Al-Shboul, 2014; Mahmood, 2016; Siddique, 2016), it has primarily focused on the technical aspects of digital government implementation. Emerging research highlights the need to explore additional determinants of government performance and citizen satisfaction, such as e-participation (Reddick and Anthopoulos, 2014; Rodríguez Bolívar, Alcaide Muñoz, Novo Vázquez & Vicente, 2019; Ma & Zheng, 2019). Government transformation itself can be considered a key determinant of government performance and citizen satisfaction, warranting further investigation.

A comprehensive review of the literature reveals a significant gap in understanding the complex interplay between government digital transformation, citizen trust, and satisfaction. While governments worldwide are investing heavily in digital transformation to modernize public services and gain citizen trust, studies show a decline in trust over the past decade. This research aims to address this gap by developing a holistic framework that examines the key factors driving government digital transformation and their impact on citizen perceptions, contributing to the emerging body of knowledge in this field and focusing specifically on the relationship between digital transformation processes and levels of citizen trust and satisfaction.

The unique political landscape of Gulf countries underscores the importance of investigating the relationship between digital government transformation and citizen perceptions. In these nations, the complex interplay between citizens and governments is characterized by a distinctive form of political legitimacy, where public voice is primarily expressed through trust and satisfaction levels. These indicators serve as crucial barometers of citizen acceptance or rejection of government performance across various domains, including service delivery and policy implementation (Salem, 2007). Consequently, every factor contributing to citizens' trust becomes a vital component in decoding the intricate government-citizen dynamic in such regimes. This study's exploration of these relationships aims to illuminate how digital government initiatives can potentially forge a more positive future for both governments and citizens, by examining the relation between digital transformation efforts and enhanced levels of citizen trust and satisfaction in their governing bodies.

The realm of digital government transformation offers positive insights into the interplay between technological innovation and citizen trust. Several nations have emerged as frontrunners in this field, displaying impressive advancements in digital governance and citizen engagement. Denmark, Estonia, and Singapore have distinguished themselves by leading recent global rankings in digital government initiatives. In the Middle East, countries such as the United Arab Emirates, Saudi Arabia, and Bahrain have made notable strides in their digital transformation efforts.

The United Arab Emirates, in particular, serves as a fascinating case study. Having achieved the top position in e-government transformation in 2022 and ranking second in the Gulf Cooperation Council (GCC) region in 2024, the UAE has launched innovative initiatives aimed at enhancing citizen satisfaction. Projects like the Dubai Smart Government and the establishment of a Ministry for Happiness illustrate the country's dedication to utilizing technology to improve public services. These advancements present a significant research opportunity to explore the complex relationship between digital government transformation and citizen trust. By analyzing the UAE's

strategic framework, researchers can uncover valuable insights into how technological innovations can bolster public sector performance and influence citizen perceptions. The importance of this research goes beyond mere technological implementation; it offers a comprehensive understanding of how governments can effectively leverage digital platforms to foster trust, enhance service delivery, and build more responsive public institutions.

Keeping the above aspects in mind, this research aims to answer three research questions:

1. What are the causes of digital government transformation in the UAE?

2. What are the effects of digital transformation for citizen trust in the government in UAE?

3. What are the effects of digital transformation for citizen satisfaction with government service provision in UAE?

1.4 Research Aim and Objectives

The relationship between digital government transformation and citizens' trust and satisfaction in the United Arab Emirates (UAE) remains an understudied area of research, despite the country's rapid progress in digital government initiatives. While the UAE has emerged as a global leader in digital government development, ranking among the top 15 countries worldwide, there is a notable shortage of empirical studies examining the intricate dynamics between the evolving digital government landscape and citizens' trust in government institutions, as well as their satisfaction with service provision. A comprehensive review of the extant literature reveals a significant gap in understanding the causal mechanisms and effects of digital transformation in relation to various contextual factors within the UAE. This extends to the absence of a robust conceptual framework that maps the multifaceted relationships between digital government initiatives, citizen trust, and satisfaction levels. The lack of such studies is particularly striking given the UAE's ambitious Digital Government Strategy 2025, which aims to create a fully digitalized government ecosystem.

This research gap presents a unique compelling opportunity to conduct in-depth investigations into the complex interplay between digital transformation efforts and citizen perceptions in the UAE. Such studies could provide valuable insights into the effectiveness of digital government initiatives in fostering trust and enhancing service delivery satisfaction. Moreover, they could contribute to the development of more refined theoretical models that account for the special socio-cultural and technological context of the UAE, thereby advancing our understanding of digital government transformation in rapidly evolving societies.

The above aim is achieved by pursuing the following objectives:

1. Examine the current literature on factors influencing the digital transformation of government and analyzing the relationship that exists between these factors and this digital transformation.
2. Reviewing the theories and models that can be used to understand the concepts of digital transformation of government and citizens' trust and satisfaction, as well as the relationship between these concepts.
3. Investigating the mechanisms that form the relation between factors that influence government transformation and citizens' trust and satisfaction.
4. Investigating the relation between digital government transformation and citizens' trust and satisfaction covering both the citizens' perspective and the government's perspective.
5. Defining the methodological framework for conducting empirical research to test the proposed hypotheses.
6. Analyzing the empirical findings and highlighting the key relationships between the different constructs proposed.
7. Discussing the key findings in relation to the literature, outlining the main theoretical and practical implications of the study and offering policy suggestions for decision-makers as well as avenues for future research.

1.5 Significance of the Research

This research synthesizes the Public Administration literature with a specific focus on the domains of ICT-enabled government transformation, citizen trust, and satisfaction. The following sections present novel contributions to the existing body of knowledge regarding these critical concepts. This research represents a novel contribution to the existing body of knowledge by examining the interplay between digital government transformation, citizen trust, and satisfaction from both citizen and policymaker perspectives. To the best of the researcher's knowledge, no previous studies have adopted this dual-perspective approach to investigate these relationships comprehensively.

Additionally, the research aim is to investigate in depth the influence of government digital transformation on citizens' trust and satisfaction, considering the causes and effects of this transformation. This map gives the research a clear understanding of the relation between four factors: technology, performance, accountability and transparency, and citizens' trust and satisfaction. The main mediator is the government digital transformation. This mapping will help in the research field to better understand the process and the influence of each factor on the transformational process of governments and, subsequently, the influence of digital transformation on citizens' trust in government and satisfaction in its service provision.

The research findings further revealed a significant relation between citizen trust in government and citizen satisfaction with government service provision. This relationship, evident in both the conceptual and thematic models, suggests a reciprocal influence between these two constructs within the broader context of digital government transformation. These findings contribute to a deeper understanding of the interconnectedness of citizen perceptions and their role in shaping the overall success of digital government initiatives.

1.6 Research Outline

This dissertation is structured into four interconnected phases: Literature review, Methodology, Findings, and Novel contribution. Chapter 2 establishes the theoretical foundation by reviewing the relevant literature and identifying the research gap. Chapter 3 presents the development of the conceptual model. Chapter 4 delves into outlining the research approach, methodology, and data collection protocol. Chapter 5 focuses on the data analysis process. Finally, Chapters 6 and 7 present the research findings and their implications, contributing to the novel body of knowledge in this field.

Chapter 1: Introduction

Chapter one establishes the foundational context for the research, outlining the research gap, objectives, and rationale. This chapter provides a comprehensive overview of the study, situating it within the broader academic landscape and highlighting its significance for contributing to the existing body of knowledge.

Chapter 2: Literature Review

Chapter two presents a comprehensive literature review, identifying key factors influencing government transformation and its impact on citizen trust and satisfaction. The review explores the complex relationships between these variables, discussing the potential antecedents and consequences of digital government initiatives.

Chapter 3: Conceptual & Thematic Models

Chapter three presents the conceptual and thematic models developed for this research, along with their underlying theoretical foundations. The conceptual model outlines the key constructs and their hypothesized relationships, informed by the factors identified in the literature review.

Chapter 4: Research Methodology

Chapter four outlines the research design and methodology, justifying the selection of a positivist philosophical approach and an explanatory research purpose. This chapter provides a rationale for the chosen approach, aligning it with the study's objectives. Additionally, the chapter details the stages of the research process, providing a clear roadmap for the study's execution.

Chapter 5: Findings

Chapter five delves into the data analysis process, employing Structural Equation Modelling (SEM) as a multivariate technique. This chapter commences with a series of data preparation steps, including exploratory factor analysis, reliability and validity assessments of the research instrument, correlation analysis, and data normality checks. These steps ensure the data's suitability for SEM analysis. Subsequently, Confirmatory Factor Analysis (CFA) is conducted to validate the hypothesized structure of the conceptual model. Following successful CFA confirmation, path analysis is performed to test the research hypotheses and explore the direct and indirect effects within the model. To enrich the quantitative findings, a thematic analysis is conducted on the semi-structured interview data.

Chapter 6: Discussion

Chapter six presents a comprehensive analysis of the research findings, aligning them with the study's objectives and addressing the identified research gap. This chapter meticulously discusses the answers to the three research questions and the results of the eleven hypotheses, providing practical explanations and linking them to the broader context of the research. The findings demonstrate a significant positive relationship between digital government transformation and citizen trust in government and satisfaction in the service provision, highlighting the transformative potential of effective digital governance initiatives.

Chapter 7: Conclusions – Novel Contribution

Chapter seven concludes the research by summarizing its key contributions, highlighting practical implications for policymakers and practitioners, and identifying limitations for future research. This chapter reinforces the study's significance as a pioneering investigation into the complex relationship between digital government transformation, citizen trust, and satisfaction, examining these factors from both citizen and policymaker perspectives. This novel approach contributes to the existing body of knowledge by providing a comprehensive understanding of the factors influencing citizen perceptions and the potential impact of digital government initiatives.

1.7 Chapter Summary

Chapter one established the foundational context for the research, outlining the rationale, research questions, objectives, and the reasoning for selecting the United Arab Emirates as the study context. The chapter provides a comprehensive literature review, identifying a critical research gap: the limited understanding of the relationship between government transformation and citizen trust and satisfaction. This gap serves as the primary motivation for the study, underscoring the need for further investigation in this area.

Therefore, this study aims to comprehensively investigate the causal relationship between digital government transformation, its antecedents, and its consequences for citizen trust and satisfaction. By elucidating the factors influencing this transformation and its impact on citizen perceptions, the research contributes to the broader fields of public administration and digital government. The study's findings offer valuable insights into the critical areas of government transformation, citizen trust and satisfaction, and the interconnectedness of these factors. The following chapters will delve into the specific contributions of this research to these domains.

Chapter 2: Literature Review

2.1 Introduction

The literature review in this section serves as a fundamental cornerstone of the study in the field of digital government transformation. It begins by interpreting the essential definitions of this transformative process and establishing the intricate relationship between government transformation and technology. The subsequent segment concentrates on the extensive exploration of the underlying causes that drive governments to embrace and invest in this transformative journey, shedding light on their motives and objectives in achieving continuous development. Lastly, the literature review presents the diverse effects stemming from this process, encompassing both the contributing factors and the outcomes that previous studies have identified. This examination of the literature aids in establishing a strong connection between the existing research and the forthcoming investigation undertaken in this study. By building upon the existing body of knowledge, this research aims to advance our understanding of digital government transformation and its implications.

2.2 E-Government Transformation

We are living in an era, in which the human lifestyle is changing dramatically. The usage and high dependence on digital technologies require an aligned behaviour from governments to meet business and society changes. These adjustments are influenced by the theory of digital transformation that was introduced in the year 2000 (Patel & McCarthy, 2000). Nonetheless, it took 14 years till the term has been recognized and widely held both by practitioners and researchers (Reis, Amorim, Melão, & Matos, 2018).

Digital transformation is a term adopted by the private sector, which is mostly associated with the need to use new technologies to stay competitive in the Internet era, where services and products are delivered both online and offline. Online service transformation is seen as a way to improve the customizability and automation through standardization (Andal-Ancion, Cartwright, & Yip, 2003; Alenezi, 2023). Others define digital transformation as a way to rebuild business models following the needs of customers by using new technologies (Berman, 2012; Warner & Wäger, 2019).

In the public sector, this type of radical transformation of services toward platforms, smart products, and customer needs has been observed earlier during the transition from paper-based to digital government and has

already gone through several phases initiated by policy changes, often tied to waves of ideological trends in public policy and public management (Bretschneider & Mergel, 2013; Schou & Hjelholt, 2018).

Digital government has managed to remain as one of the priorities of the agenda of governments since 1996, hence capturing researchers' attention toward an evolving topic thereafter (Abu-Shanab, 2017). Digital government refers to the integration of ICT into public administration, aiming to enhance service delivery, improve transparency, and promote citizen engagement. According to the OECD, digital government strategies are designed to bridge the gap between governments, citizens, and businesses by utilizing technology to increase efficiency and effectiveness throughout the policy and service lifecycle (OECD, 2024). Grönlund and Horan (2005) highlight that digital government involves transforming the relationships between government agencies and their constituents, ultimately striving for improved service delivery and greater accountability. Additionally, the Digital Government Benchmark study provides a framework that categorizes digital government into various stages, ranging from basic e-government services to fully developed "smart government." This framework underscores the significance of data utilization and collaborative service delivery models (Interoperable Europe, 2018). As an evolving concept, digital government embodies a multidisciplinary approach that draws from public administration, information science, and management studies, addressing contemporary governance challenges through innovative technological solutions (Dawes & Helbig, 2015).

Digital government has emerged as a transformative approach that harnesses the power of technology to enhance government operations, particularly in terms of delivering services to citizens and businesses. This evolution has propelled the public sector to a new level of efficiency and effectiveness, giving rise to a distinct field of study and measurement. In the early 2000s, numerous organizations began publishing comparative international rankings and reports that shed light on the advancement of electronic government and e-participation. These assessments primarily focused on evaluating countries' readiness to adopt the latest info communication technologies in the realm of public administration. Among these reports, the United Nations' E-Government Survey stands out as the most renowned and frequently referenced publication. With its biennial release, this comprehensive survey offers valuable insights into the progress and performance of countries worldwide in embracing and implementing e-government initiatives.

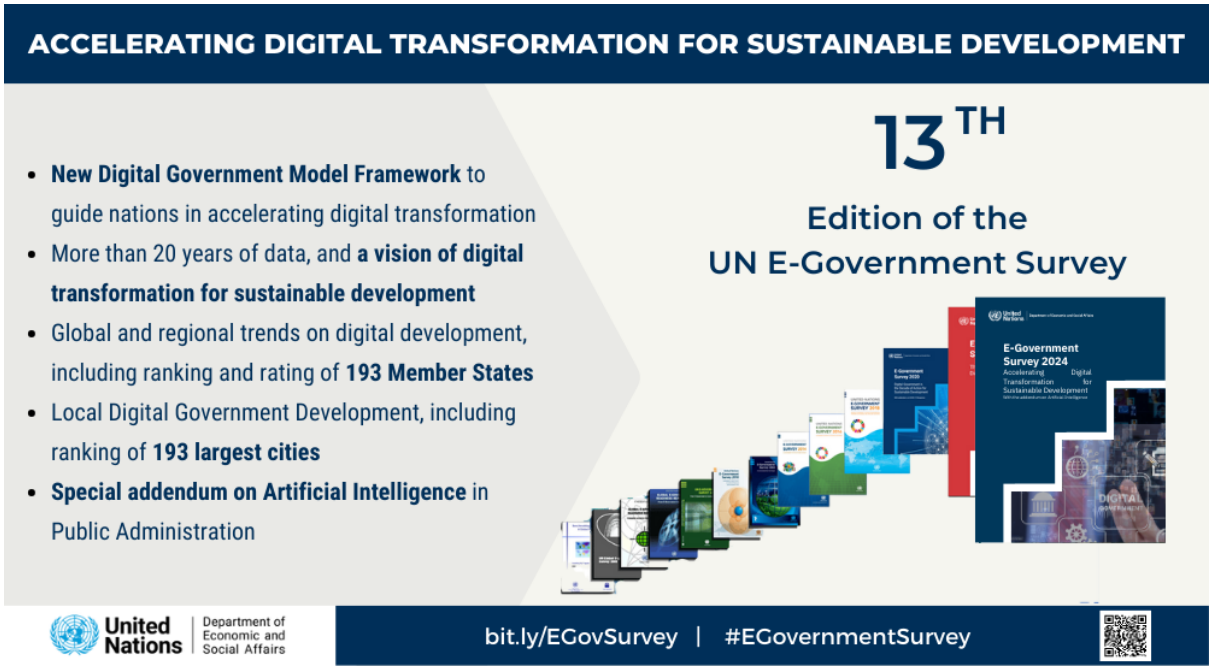


Figure 2.1 Accelerating Digital Transformation for Sustainable Development, 13th Edition of the UN E-Government Survey 2024

As a widely recognized benchmark, the UN E-Government Survey serves as an essential resource for policymakers, researchers, and practitioners in understanding the global landscape of e-government and fostering best practices for digital governance as shown in Figure 2.1. The Survey uses several indexes to assess the progress of e-government development. Here are the main indexes used in the UN E-Government Survey:

- E-Government Development Index (EGDI): This index is the core index used in the UN E-Government Survey as shown in Figure 2.3. It is a composite index that measures the readiness, use, and sophistication of e-government services. The index is calculated based on three dimensions: Online Service Index (OSI), Telecommunication Infrastructure Index (TII), and Human Capital Index (HCI).

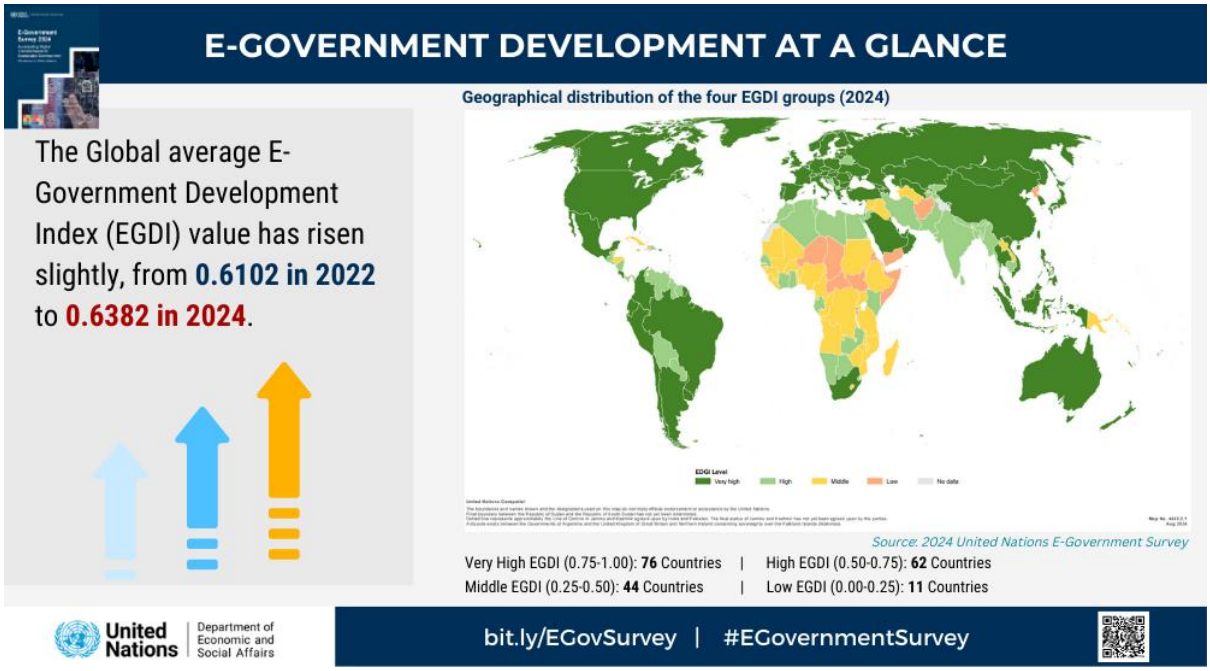


Figure 2.2 The Global Average E-Government Development Index (EGDI), UN E-Government Survey 2024

- Online Service Index (OSI): This index measures the availability and accessibility of e-government services through online platforms.

- Telecommunication Infrastructure Index (TII): This index measures the availability and quality of telecommunication infrastructure in a country, such as broadband connectivity and mobile network coverage.

- Human Capital Index (HCI): This index measures the level of education and skills of a country's workforce, particularly in the areas of information and communication technologies (ICT).

- Open Data Readiness Index (ODRI): This index measures a country's readiness to implement open data initiatives, including policies, legal frameworks, and technical capabilities.

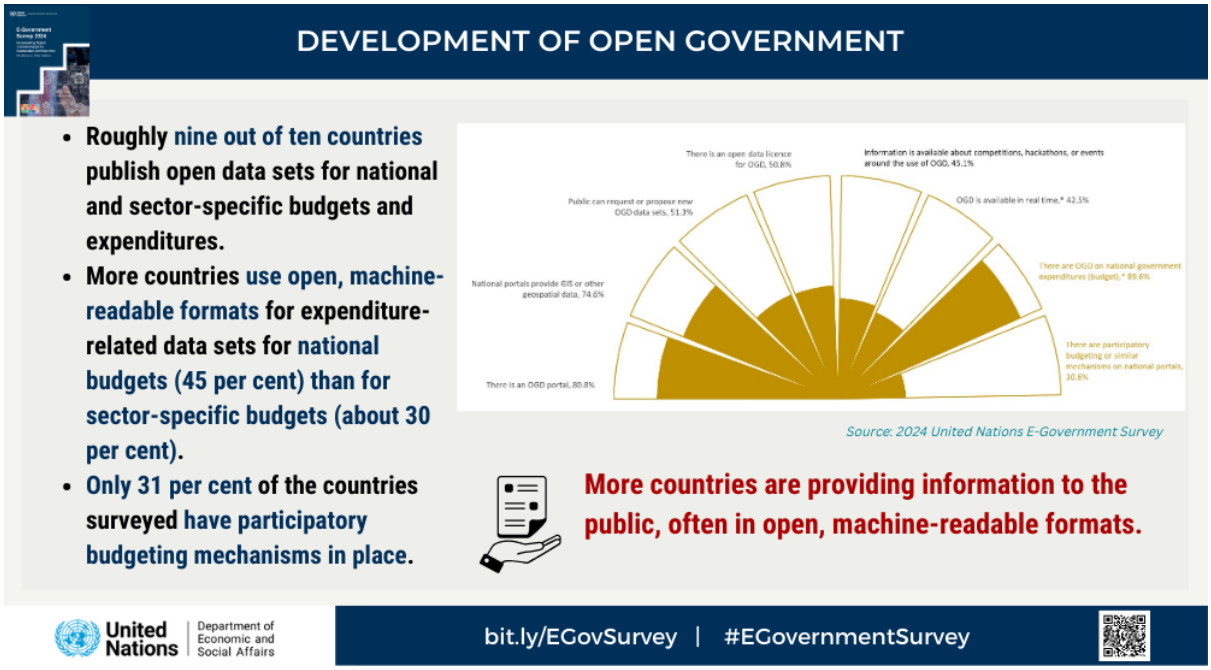


Figure 2.3 Development of Open Government, UN E-Government Survey 2024

- Global Open Data Index (GODI): This index measures the availability and accessibility of open government data in a country.

- E-Participation Index (EPI): This index measures the extent to which citizens can participate in the decision-making process of their government through e-participation tools and platforms.

These indexes provide a comprehensive assessment of the progress made by countries in developing their e-government services and infrastructure, and in promoting open government and citizen participation.

Although digital government initiatives have been introduced in most parts of the world, some of which are in their advanced stages, citizens' trust in governments remains a concerning issue for most (Bean, 2015; Edwards, 2015; Morgeson, 2011; Teo, 2008; World Employment and Social Outlook Trends, 2015; 2016; 2017;2021, 2022; 2023).

2.3 Causes of Digital Government Transformation

Digital transformation is a widely recognized paradigm shift, often characterized as a technological revolution (Perez, 2010; Kraus, Jones, Kailer, Weinmann, Chaparro-Banegas, & Roig-Tierno, 2021). The rapid advancements in technology witnessed beyond the public sector have significantly influenced citizens' expectations regarding the government's ability to provide digitally driven services of great value (Bertot, Jaeger, & Grimes, 2010; Schwab, 2017). However, it is crucial to note that digital transformation goes beyond technology; it involves a profound cultural change that permeates the entire organization. This transformative process has been extensively studied, marking a crucial transition period into a new era of public sector and government operations. Exploring the underlying causes and dynamics fuelling this shift sheds light on the factors contributing to the emergence of digital transformation.

External factors play a pivotal role in driving the power for digital transformation in public administration. Stakeholders, including citizens, businesses, and politicians, have played a significant part in instigating changes within organizational environments and advocating for technology adoption that aligns with the new digital landscape. Furthermore, citizens' demands for greater participation and interactive engagement in the policy-making process within the public sector have emerged as influential factors. The advent of technology has facilitated and simplified citizen engagement, enabling citizens to actively contribute to the co-creation of services and policies. This shift reflects a paradigm in which citizens and external stakeholders collaborate and contribute to the development and delivery of government services (Meijer, 2015; Roblek, Meško, Bach, Thorpe, & Šprajc 2020).

Luna-Reyes (2017) further substantiates these assertions by examining how technology enables widespread citizen participation through platforms for e-petitioning and the utilization of social media. Various research studies delve into the potential impact of digital governance on democracy and democratic representation (D'Agostino, Schwester, Carrizales, & Melitski, 2011; Dawes, 2008; Lee, Chang, & Berry, 2011). As citizens, businesses, and politicians encounter technological advancements in their daily lives and work environments, they expect a similar level of technological integration within public administrations to ensure seamless delivery of public services. Embracing digital transformation holds the promise of enhancing processes, relationships, and services, aligning them with the heightened expectations of stakeholders. By bridging the gap between citizen demands and service delivery, public administrations can improve citizen-government interactions and cultivate a more responsive and effective governance system (Berman, 2012; Lee-Geiller, & Lee 2019).

Moreover, the adoption of ICTs in government organizations is considered a bridge for the transition and one of the main causes of digital transformation. ICTs have the potential to support administrative processes and induce changes at various dimensions, including organizational culture and structures, at both organizational and intra-organizational levels (Nograsek & Vintar, 2014; Panagiotopoulos, Protogerou, & Caloghirou, 2023). By adopting ICTs, the values underlying the public sector can also be transformed (Bannister & Connolly, 2014). Cordella and Paletti (2018) argue that ICTs enable co-production and provide new avenues for citizens and stakeholders to engage in value creation. Expectations arise from the belief that the public sector can utilize ICTs to enhance service delivery, transform organizational processes and culture, and have a significant impact on value creation. Public administration recognizes the need to improve service delivery, increase efficiency and effectiveness, and enhance transparency, accountability, and citizen involvement (Luna-Reyes & Gil-Garcia, 2014; Nograsek & Vintar, 2014; Rosenbloom, Kravchuk & Clerkin, 2022).

Digital transformation encompasses various dimensions that address citizens' increasing demand for digital government services due to their familiarity with digital technology in everyday life (Bertot, Jaeger, & Grimes, 2010; Millard, 2023). Rapid technological advances have made digital transformation not only possible but also necessary for governments to keep up with modern developments (Meijer, 2016). The adoption of digital platforms in government operations can streamline processes, reduce costs, and improve efficiency (Hossain & Dwivedi, 2017). These platforms also enhance transparency and accountability by making information more accessible to citizens (Damanpour & Schneider, 2009). Additionally, digital platforms facilitate collaboration between government agencies and external partners, motivating innovation and the delivery of improved services (Rouse & Corbitt, 2015).

By acknowledging digital transformation as both a technological and cultural phenomenon, organizations can effectively embrace this shift and leverage its potential to drive positive change in public service delivery and citizen engagement. A comprehensive understanding of the underlying causes and dynamics of digital transformation is crucial for navigating the complexities and challenges associated with this transition, facilitating the successful integration of digital technologies and practices within government entities.
Western countries took the lead being the first to adopt the primary steps in transforming government operations into online operations (Chadwick & May 2003). In the mid-1990s, the governments of the U.S. and Britain, together with other Western countries such as Canada and Australia, led the way in establishing a basic informational Web presence. Public organizations across the globe and at different governmental levels followed

the steps of these countries and began to apply Internet technologies in innovative ways to deliver services, engage citizens, and improve performance.

The U.S. has been leading the digital government development since the Clinton administration in the 1990s; likewise, the nations in the EU have been making digital government a major administrative and political priority since the 1990s. While North America initially led the charge in digital government, recent developments indicate that European countries now rank highest among all geographic regions in the UN e-Government Survey (2024). Notably, EU member states Denmark and Estonia occupy the top two positions, followed by Iceland, the United Kingdom, Finland, the Netherlands, Germany, Sweden, Norway, Spain, Ireland, Lithuania, Austria, and Switzerland. This shift highlights the significant advancements made by European nations in leveraging digital technologies to enhance public service delivery and citizen engagement. Singapore's e-government initiatives started as early as 1980, with the launch of the Civil Service Computerization Program (CSCP). The first E-Government Action Plan replaced the CSCP in 2000. The vision of the e-Government Action Plan was "to be a leading e-Government to better serve Singapore and Singaporeans in the new knowledge-based economy" (Kam & Singh, 2005). 900 million dollars were dedicated to the plan with six proposed programs: Knowledge-based workplaces; e-service delivery; technological experimentation; operational efficiency improvement; an adaptive and robust information and communications infrastructure; and information and communications education.

In 1987, the Korean government implemented initiatives to establish a national computing backbone and to consolidate key databases. As early as the late 1990s, Koreans were able to enjoy a number of online services, including registering births and finding new economic statistics. The Korean government invested 5 billion dollars in ICT from 1996 to 2001. Since 2004, Korea has led the world in the percentage of households connected to high-speed Internet (over 70%), mobile communication users (over 72%), and the rate of ICT diffusion (Lee, 2003). Following the development of IT infrastructure, the Korean government launched an e-Government Special Committee and drafted an e-Government Law in early 2001. The Committee named 11 key tasks in the "Strategy Report Committee for e-Government" in May 2001: Innovative and improved services, productivity and efficiency and building an infrastructure for e-government.

From 2003 to the latest UN report in 2024, the E-Government Development Index (EGDI) scores of Arab countries have improved significantly, particularly among members of the Gulf Cooperation Council (GCC). For example, Saudi Arabia's score rose from a low of 0.3376 in 2003 to an impressive 0.9602 in 2024, placing it first among Gulf nations. Similarly, Kuwait, Oman, and Qatar began with relatively low EGDI scores but have demonstrated

remarkable potential for e-government development. The United Arab Emirates and Bahrain also made substantial gains, starting with scores of 0.5345 and 0.5097 in 2003, respectively, and reaching scores of 0.9533 and 0.9196 by 2024. The UAE ranked first among GCC countries in the 2022 report and second in the 2024 report. Other Arab nations, such as Algeria, Egypt, and Morocco, began with lower EGDI scores and have shown gradual improvement over the years.

Since digital transformation has become a critical agenda item for governments worldwide, the UAE government has recognized the need to embrace digital technologies to enhance public services, improve operational efficiency, and drive innovation. One significant driver of digital transformation in the UAE government is the increasing demand for efficient and accessible public services. Citizens and businesses expect seamless digital experiences and personalized services similar to those provided by private sector organizations (Salem 2016; Jasimuddin, Mishra & Saif Almuraqab, 2017).

The UAE government has acknowledged this demand and recognized that digital transformation is crucial for meeting citizens' expectations and enhancing their satisfaction with government services (Almarzooqi & Mohammed, 2020). The importance of meeting citizens' expectations through digitalization has been highlighted in various studies, emphasizing the role of citizen demand as a driving force behind government digital transformation (Moon & Welch, 2018; Rana, Dwivedi, & Williams, 2013).

Furthermore, advancements in technology have provided the UAE government with opportunities to transform its operations and service delivery. Technologies such as cloud computing, data analytics, artificial intelligence, and blockchain have the potential to revolutionize government processes and improve efficiency (Al-Tawil, 2019). The adoption of these technologies enables the government to automate manual tasks, streamline administrative processes, and enhance decision-making (Elbanna, Youssef, & Lacity, 2021). The importance of technology as a driver of government digital transformation is emphasized in studies that highlight the role of technological advancements in enabling organizations to adopt digital solutions and practices (Lacity & Willcocks, 2019; Moon & Welch, 2018).

In addition to technological advancements, the UAE government's work towards fostering innovation and becoming a global leader has driven its digital transformation efforts. The government recognizes that digital transformation can contribute to economic diversification, attract foreign investment, and enhance the country's global competitiveness (Almarzooqi & Mohammed, 2020). By embracing digital technologies, the UAE aims to

position itself as a digital hub and create a culture of innovation and entrepreneurship (Al-Tawil, 2019). The importance of innovation and economic competitiveness as drivers of government digital transformation is supported by research that highlights the role of digital technologies in driving economic growth and development (Bannister & Connolly, 2014; Lacity & Willcocks, 2019).

The UAE government has demonstrated a robust commitment to digital transformation through the establishment and execution of national strategies and initiatives. Central to this effort is the National Digital Government Strategy, which aligns with the United Nations' Sustainable Development Goals (SDGs) for 2030, particularly in bridging the digital divide and reducing inequality. This strategy aims to ensure a safe, stable, and peaceful society, supported by a well-developed justice system that upholds laws to protect both Emiratis and the diverse communities residing in the UAE. By enabling peace, justice, and strong institutions, the UAE is working towards fulfilling its SDG commitments (United Arab Emirates Government, 2022).

The National Digital Government Strategy is closely aligned with several key national strategies, including the Unified Digital Platform Policy, which seeks to consolidate all government services onto a single platform for enhanced efficiency. The UAE Strategy for Government Services set a target for 90% of public services to be accessible through its unified digital platform by 2023, promoting proactive service design in partnership with community sectors. As of 2025, the UAE continues to expand and enhance its digital services, further strengthening user accessibility and engagement across government platforms. Additional initiatives like the National Policy for Quality of Digital Life focus on building community capacity for responsible Internet use. Furthermore, the UAE Centennial 2071 outlines a long-term vision for government operations, while the UAE Strategy for Artificial Intelligence aims to position the nation as a leader in AI investments across various sectors. Local strategies such as Abu Dhabi's Digital Transformation Strategy and Smart Dubai 2021 reinforce these efforts by prioritizing digital innovation and enhancing public service delivery through advanced technologies. Together, these initiatives reflect a comprehensive approach to digital governance that emphasizes collaboration, transparency, and citizen engagement. (Telecommunications and Digital Government Regulatory Authority, 2022).

In conclusion, digital transformation in the government sector of the UAE is driven by multiple causes and factors, including the increasing demand for efficient public services, advancements in technology, the pursuit of innovation and global competitiveness, and the implementation of national strategies. These drivers have propelled the UAE government's digital transformation efforts, enabling it to enhance service delivery, improve

efficiency, and position itself as a digital leader. The scientific references provided support the significance of these causes and factors in driving digital transformation in the government sector of the UAE.

2.3.1 Transparency and its Relationship with Transformation of Government

Transparency, as defined by Chen (2003), refers to the capacity of external stakeholders to evaluate a company's true standing, a concept that resonates with various scholarly perspectives. Extensive literature, including studies by Bannister and Connolly (2011), O'Neill (2009), Tolbert and Mossberger (2006), Waller and Weerakkody (2016), and Conte, Sardanelli, Vollero & Siano (2023) supports this notion. These scholars have argued in favor of the significance of transparency in organizational contexts, emphasizing its role in promoting accountability, trust, and effective decision-making. By allowing outsiders to gain insight into a company's actual state, transparency facilitates informed assessments, enhances corporate governance practices, and provides a climate of openness and integrity. Consequently, it emerges as a vital element in today's dynamic business landscape, serving as a foundation for sustainable and ethical business practices. Transparency could be a key element for enhancing citizen trust and satisfaction in government.

The integration of transparency with digital government (Garcia-Murillo, 2013; Mahmood and Weerakkody, 2014; Hochstetter, Vásquez, Diéguez, Bustamante & Arango-López, 2023) and technology (Garcia-Murillo, 2013; Chen, 2013; Vorm, & Combs, 2022) plays an important role in the transformation of government. This connection is crucial due to the fundamental impact transparency has on bolstering citizen trust and satisfaction in governmental processes. Therefore, it is imperative to recognize that transparency cannot be overlooked or examined in isolation (O'Neill, 2009; Tolbert and Mossberger, 2006; Albu, & Flyverbom, 2019). This viewpoint is substantiated by existing literature (Chen, 2003; Song and Lee, 2016; Rijal & Saranani, 2023), which underscores transparency as a core element for achieving government transformation.

By aligning transparency with digital government initiatives, governments can enhance the accessibility, accountability, and responsiveness of their operations (Sofyani, Riyadh & Fahlevi 2020). Through the utilization of advanced technologies, such as digital platforms and data analytics, transparency can be further augmented, enabling the dissemination of information in a timely and comprehensive manner. This integration promotes an environment where citizens can actively engage with government entities, ensuring that decision-making processes are inclusive, fair, and well-informed (Gupta, Leszkiewicz, Kumar, Bijmolt & Potapov, 2020).

Furthermore, the relationship between transparency and the transformation of government extends beyond mere procedural improvements. It encompasses broader goals, such as promoting democratic governance, reducing corruption, and promoting public participation (Lathrop & Ruma, 2010). Transparent governance practices not only cultivate an atmosphere of trust between citizens and their government but also lay the groundwork for the efficient allocation of resources and the delivery of effective public services (Speer, 2012). Therefore, acknowledging the symbiotic relationship between transparency, digital government, and technology is paramount in realizing the transformative potential of government. By embracing transparency as a fundamental principle and integrating it into the fabric of governance systems, governments can cultivate greater citizen engagement, trust, and ultimately achieve a more efficient and responsive public sector (Millard, 2018).

Extensive research within the public policy sector has delved into the multifaceted impact of digital government transformations, as reflected in the existing literature (Savaget, Chiarini, & Evans, 2019). These studies have identified a range of expected benefits, including enhanced administrative effectiveness, improved public services, and more seamless interactions between citizens and public administration. Such transformations hold the potential to foster transparency, accountability, and ultimately contribute to greater legitimacy of government institutions. However, it is crucial to acknowledge the complexities inherent in measuring the full extent of these changes, given the multitude of factors influenced by digitalization. Nonetheless, the pursuit of increased transparency remains a central expectation within the realm of digital interventions in the public sector (Agostino, Saliterer & Steccolini, 2022).

In the context of transparency, authors have emphasized the potential of blockchain technology to drive greater openness in government activities, thereby enhancing public trust without the need for virtual states (Shen & Pena-Mora, 2018). This emerging technology holds promise for revolutionizing the transparency landscape, enabling more comprehensive access to information and strengthening the relationship between citizens and public authorities.

Scholars have conducted investigations into the effects of digital interventions on transparency in government operations (Buell, Porter & Norton, 2021). Their findings demonstrate an increase in transparency, as evidenced by public access to a greater amount of data and its subsequent impact on decision-making processes within public service sectors, particularly in areas such as taxation and payments. These digital interventions have also facilitated more effective policy implementations, yielding positive outcomes for both governments and citizens.

Furthermore, the advent of new governance paradigms has the potential to reshape the dynamics between citizens and administration (Janowski, Estevez & Baguma, 2018). Traditional bureaucratic paradigms, characterized by the impartial application of rules, are evolving into more inclusive models. The consumerist paradigm emphasizes the provision of public services tailored to meet the needs of citizens, while the participatory paradigm promotes shared responsibility between administration and citizens in policy and service processes (Linders, 2012; Chun, Shulman, Sandoval & Hovy, 2010). Digital technology acts as a catalyst for these paradigm shifts, facilitating direct participation in democratic decision-making processes, mobilizing individuals with historically lower levels of political engagement, and improving access to services that were previously inaccessible to certain groups (Dubow, 2017; World Bank Group, 2016; World Bank, 2022).

In conclusion, the exploration of digital government transformations and their impact on transparency in the public sector has been a subject of extensive scholarly inquiry. The literature highlights the potential benefits of such transformations, including increased administrative effectiveness, improved public services, and more transparent interactions between citizens and public administration. By leveraging innovative technologies like blockchain and embracing new governance paradigms, governments can foster greater trust, citizen engagement, and access to services. It is through these concerted efforts that the transformative potential of digitalization in the public sector can be harnessed to build more transparent, accountable, and citizen-centric governance systems.

2.3.2 Accountability and its Relationship with Transformation of Government

Accountability, closely intertwined with transparency, is widely recognized as a critical element for the transformation of government (Shenkoya, 2023; Amaliah, 2015; Bannister and Connolly, 2011). In the context of governance, Chen (2003) and subsequent studies highlight that accountability involves management being accountable to stakeholders, ensuring that their actions align with stakeholder expectations and values. This definition is supported by more recent research, which underscores that accountability is a complex, three-dimensional concept involving responsibility, transparency, and answerability (Sharon, Drach-Zahavy & Srulovici, 2022). It has been argued by various authors (Mansoor, 2021; Bannister and Connolly, 2011; Kim, 2009; Norquist, 2007) that accountability and transparency play pivotal roles in influencing government transformation, ultimately impacting citizens' trust and satisfaction. To delve deeper into the relationship between transparency and accountability and their impact on government transformation, we can explore three prominent theories.

The first theory is rooted in public administration, emphasizing that government transformation, supported by ICT, enables accessibility of government operations to all citizens. This increased accessibility empowers citizens with the ability to oversee and scrutinize the work and actions of public administration, allowing them to hold the government accountable for their decisions and actions (Malodia, Dhir, Mishra & Bhatti, 2021; Kettl, 2015; Milakovich, 2012).

The second theory stems from institutional theory, positing that the adoption of ICT in government transformation enhances transparency and accountability. This, in turn, influences the organizational aspect and institutional arrangements within the government, shaping the way government institutions operate and interact with stakeholders, including citizens (Kim, 2009; Weerakkody, 2016). By fostering greater transparency and accountability, transformed governments establish a framework that promotes trust, effective governance, and responsible decision-making.

The third theory, known as principal-agent theory, describes the relationship between government as the agent and citizens as principals. In this model, citizens monitor the performance of the government, while the government provides progress reports supported by evidence (Kim, 2009). When a government undergoes transformation and adopts transparency, it ensures that essential information related to services, processes, and procedures is readily available to citizens. Additionally, the government can share performance reports, key performance indicators (KPIs) achieved, and cases handled. By making such details accessible, the transformed government inherently embraces accountability, as citizens are empowered to hold the government accountable based on the information provided (Van Thiel, Van Genugten & Voorn, 2020; Van Thiel, 2016; Miller, 2005)

In conclusion, accountability, alongside transparency, emerges as a crucial element for government transformation. The interplay between these two concepts influences citizens' trust and satisfaction. The three theories discussed shed light on how transparency and accountability contribute to the transformation of government. Through public administration theory, institutional theory, and principal-agent theory, we see the empowerment of citizens, the enhancement of organizational aspects, and the establishment of a monitoring and reporting mechanism. By nurturing transparency and accountability, governments can pave the way for responsible and responsive governance, fostering trust and meeting the evolving needs of citizens.

2.3.3 Performance and its Relationship with Transformation of Government

Digital government, has been implemented by governments with the aim of improving government performance, ultimately leading to increased citizen trust and satisfaction (Alkraiji & Ameen, 2022; Nawafleh, 2020; Al-Shafi and Weerakkody, 2008; Al-Shafi and Weerakkody, 2010; Srivastava and Teo, 2009). The significance of performance in promoting trust in government has been emphasized by Hudson (2006) and supported by other researchers (He & Ma, 2021; Beeri, Uster & Vigoda-Gadot, 2019; Lee, 2018).

The existing literature encompasses studies that examine government performance and factors that may influence citizen trust and satisfaction (Alzahrani, Al-Karaghouli & Weerakkody, 2018). Performance can be defined as an organization's ability to effectively and efficiently utilize its resources (Dubey, Bryde, Dwivedi, Graham, Foropon & Papadopoulos, 2023; Liang, Wei & Chen, 2017; Hameed and Al-Shawabkha, 2013). This notion can be associated with the transformation of government, as it involves the utilization of the same resources. Citizens perceive performance as a crucial determinant of satisfaction and trust (Alzahrani, Al-Karaghouli & Weerakkody, 2017; Morgeson and Petrescu, 2011). Therefore, the performance of an organization, including government, significantly affects the satisfaction and trust of stakeholders, including citizens (Ma & Zheng, 2019; Ma, 2017; Kim., 2009; Morgeson, 2011).

Within the current literature, one theory that supports the link between government performance and citizens' satisfaction is the micro-performance theory (Berro, 2021; Lee, 2018; Kampen, 2006; Van de Walle and Bouckaert, 2003). This theory serves as a foundation for understanding the relationship between government performance and citizens' satisfaction and trust. The theory posits that trust in government is the ultimate outcome, and better government performance leads to satisfied citizens, thereby enhancing trust in government (Van de Walle and Bouckaert, 2003). Numerous studies have utilized the micro-performance theory to investigate the relationship between government performance and trust in government, mediated by citizens' satisfaction (Tichaawa, Idahosa & Nunkoo, 2022; Liu, Gao & Huang, 2020; Kampen, 2006; Kampen, 2003; Van de Walle and Bouckaert, 2003). Therefore, this theory and the associated studies offer valuable insights for examining the relationships between government transformation, citizens' satisfaction, and citizens' trust in government.

For the present research, a transformed government holds the potential to increase the number of satisfied citizens, thereby enhancing citizens' trust and satisfaction in government. By leveraging digital government initiatives and focusing on improving performance, governments can foster a greater sense of satisfaction among citizens, ultimately leading to enhanced trust in government.

2.4 Effects of Government Digital Transformation

The existing literature provides important insights of the effects of government digital transformation, supported by empirical evidence that reinforces the impact of recent digital technologies in the government sector (Haug, Dan & Mergel, 2024; Di Giulio & Vecchi, 2023; Eom & Lee, 2022; Liva, Codagnone, Misuraca, Gineikyte, & Barcevicius, 2020). These studies highlight various dimensions of the transformative process, emphasizing its positive implications for efficiency (Li, Gao, Han, Gupta, Alhalabi & Almakdi, 2023), productivity (Gaglio, Kraemer-Mbula & Lorenz, 2022), cost savings (Kraus, Jones, Kailer, Weinmann, Chaparro-Banegas & Roig-Tierno 2021), effectiveness (Melović, Jocović, Dabić, Vulić & Dudic, 2020), quality improvement (Kraus, Schiavone, Pluzhnikova & Invernizzi, 2021), transparency (Gomez-Trujillo & Gonzalez-Perez, 2022), accountability (Castro & Lopes, 2022) and trust (Abdulkareem & Mohd Ramli, 2022). By examining these effects, we can gain valuable insights into the multifaceted benefits that arise from the adoption of digital technologies in government operations. Additionally, the empirical evidence lends credibility to the claims made in the literature, strengthening our understanding of the potential outcomes and advantages associated with government digital transformation.

The incorporation of ICT in government operations has emerged as a catalyst for increased efficiency and optimized utilization of public resources. Extensive literature on the economics of ICT in the public sector offers compelling evidence of the tangible outcomes achieved through the application of digital technologies. One of the most observable effects is the reduction in operational and labor costs within public administrations, resulting in more practical, faster, and cost-effective service delivery (Dhaoui, 2022; PwC, 2017; Kassen, 2014).

ICT applications, such as Artificial Intelligence (AI), play a pivotal role in transforming government operations. AI possesses the capability to comprehend, monitor, reason, predict, interact, learn, and improve its responses over time, potentially replacing numerous tasks traditionally conducted by humans (Hila & Fellow, 2017). It is important to note that the adoption of AI and other digital technologies does not necessarily lead to job losses but rather triggers a significant reconfiguration of work and employment patterns within the government sector (Acemoglu & Restrepo, 2018; Agrawal, Gans, & Goldfarb, 2019).

Furthermore, the impact of digital technology applications extends beyond cost reduction and workforce transformation. It enables governments to streamline administrative processes, improve decision-making, enhance public service delivery, and foster citizen engagement (Latupeirissa, Dewi, Prayana, Srikandi, Ramadiansyah & Pramana, 2024). The use of ICT in government operations also enhances data-driven governance, facilitating evidence-based policy formulation and implementation (Fountouki, 2020; Wang, 2021). By leveraging ICT applications, governments can capitalize on the vast potential for digital transformation, leading

to increased operational efficiency, improved service quality, and enhanced citizen experiences. The comprehensive understanding of the economic and societal outcomes derived from digital technology adoption in government operations will guide policymakers and practitioners in making informed decisions and developing strategies that optimize the benefits of digital transformation.

2.4.1 Effects of Government Digital Transformation in Relation to Citizens Trust

Trust in government can be defined as the confidence that citizens have in authorities to act in their best interests and fulfill their responsibilities (Barnes and Gill, 2000). It is based on the public's expectations of governmental entities to uphold justice, safeguard fundamental rights, and provide essential services such as food, health, shelter, and safety. Trust involves a willingness to rely on government officials to make effective decisions and prioritize the interests of the citizens (Gebrihet, Gebresilassie & Woldu, 2023; Brown, 2017; Houston and Harding, 2013).

The evaluation of government performance is closely tied to the trust that people place in their ability to effectively govern the state and fulfill their obligations (Laux, Wachter & Mittelstadt, 2024; Cheema, 2011; Yang & Holzer, 2006). Citizens expect the government to assume responsibility for all public actions and prioritize the interests of the majority (Kiss, Sekulova, Hörschelmann, Salk, Takahashi & Wamsler, 2022; Mansoor, 2021; Grimmelikhuijsen, 2013). As democratic systems rely on citizens' trust, government actions and policies should align with their expectations and be efficiently executed. The evaluation of government actions encompasses concepts such as responsiveness, accountability, and transparency, which are crucial in meeting citizens' expectations (Beshi & Kaur, 2020).

Research has highlighted the impact of perceived responsiveness, accountability, and transparency on citizens' trust in government. Perceived responsiveness refers to the perception that the government is attentive and responsive to citizens' concerns (Chen, Liang, & Chen, 2023; Gil de Zúñiga, Diehl & Ardévol-Abreu, 2017). Perceived accountability relates to the belief that the government is responsible and answerable for its actions (Manaf, Mohamed & Harvey, 2023; Farwell, Shier, & Handy, 2019; Yang & Northcott, 2019). Perceived transparency involves the degree to which the government provides accessible and clear information about its actions and decision-making processes (Sabani, 2021; Farwell, 2019).

In conclusion, trust in government is based on citizens' confidence in the authorities' ability to act in their best interests. It relies on factors such as responsiveness, accountability, and transparency, which shape citizens' perceptions of government performance and ultimately influence their trust in government.

Over the past few decades, numerous studies have highlighted the challenges faced in citizens' trust in governments, despite significant investments in government technologies and ambitious digital transformation projects (E-Government Survey Reports of 2012, 2014, and 2016). These projects, involving substantial financial investments, have aimed to enhance government services and operations. However, the outcomes have often fallen short of expectations, leaving governments with a sense of disappointment regarding their ability to achieve desired objectives.

Research conducted by the Organization for Economic Co-operation and Development (OECD) reveals a consistent decline in public trust and satisfaction with governments across OECD countries (Edwards, 2015). This decline is not limited to specific regions but appears to be a global phenomenon. Similar patterns of these challenges within the subjects of trust and satisfaction can be observed in various regions, including the Middle East, North Africa, East Asia, and Latin America (World Employment and Social Outlook Trends, 2017; 2023; 2024).

The erosion of citizen trust in government institutions is a complex issue influenced by multiple factors. While digital transformation initiatives were intended to improve government services and influence public trust, their impact on trust has been mixed. Understanding the underlying causes of this decline in trust is crucial for governments seeking to restore confidence and strengthen their relationships with citizens.

Extensive research has been conducted to explore the relationship between trust in governments and digital government initiatives (Alkraiji & Ameen, 2022; Hooda, Gupta, Jeyaraj, Giannakis & Dwivedi, 2022; Pérez-Morote, Pontones-Rosa & Núñez-Chicharro, 2020; Bannister and Connolly, 2011). However, these studies have presented different findings, leading to differing perspectives on the impact of digital government on trust. On one hand, there are authors who argue that the implementation of digital government initiatives can enhance trust in government (Matheus, Faber, Ismagilova & Janssen, 2023; Mansoor, 2021; Androniceanu, 2021; Al-Shafi and Weerakkody, 2008). According to their viewpoint, digital government can improve transparency, accessibility, and efficiency in delivering public services, thereby fostering trust among citizens.

On the other hand, some researchers have emphasized that trust in government is primarily strengthened through transparency in information and services, rather than solely relying on the adoption of digital technologies (Androniceanu, 2021; Matheus & Janssen, 2020; Beshi & Kaur, 2020; Morgeson, 2011). These studies highlight the importance of open and accountable governance practices, where citizens have access to accurate information, meaningful participation, and opportunities to hold government officials accountable.

The contrasting findings from these studies indicate the complexity of the relationship between digital government and trust. They suggest that while digital government initiatives can have positive effects on trust, they should be

accompanied by transparency measures and citizen-centric approaches to ensure a holistic improvement in trust levels.

The examination of citizens' trust in their governments encompasses various factors, many of which have been overlooked in previous studies. One common limitation is the isolated investigation of specific components of citizen experience in digital government, failing to consider the intricate complexities and potential interrelationships among factors that contribute to the overall citizen experience (Malodia, Dhir, Mishra & Bhatti, 2021; Morgeson, 2011). By neglecting the comprehensive understanding of these multifaceted relationships, a holistic view of the factors influencing citizen trust may be missed.

Furthermore, researchers have not reached a consensus regarding the definitive set of factors that impact citizens' trust in governments, particularly concerning the role of digital government transformation and its influence on trust-related factors. The lack of agreement on these influential factors highlights the complexity of the trust relationship within the context of digital government initiatives.

Additionally, it is crucial to acknowledge that poor government performance has been identified as a significant factor contributing to the decline in citizens' trust (Zhang & Yang, 2022; Hartanto, Dalle, Akrim & Anisah, 2021; Mahmood, Weerakkody & Chen, 2020; Kumagai & Ilorio, 2020; Bean, 2015). Concurrently, the increasing inequality among the population has also been recognized as a causal factor in the erosion of trust (World Employment and Social Outlook Trends, 2017; 2023; 2024). Governments' inability to provide sufficient evidence exacerbates the decline in trust, as the lack of transparency and accountability hinders their capacity to effectively address the trust deficit.

In order to comprehensively understand the dynamics of citizen trust in governments, it is imperative to consider the multifaceted nature of citizen experiences, to recognize the varying factors influencing trust, to address the performance and inequality concerns, and to emphasize the significance of transparent and accountable governance practices. By investigating these complex interrelationships and identifying effective strategies, governments can strive towards rebuilding trust and fostering stronger connections with their citizens.

2.4.2 Effects of Government Digital Transformation in Relation to Citizen's Satisfaction

Satisfaction was also an important factor studied through time to investigate how citizens react to government services in terms of quality, responsiveness and efficiency. Thus, satisfaction indicators are not new to these studies. At the end of the 1970s and the beginning of the 1980s, there was an increase in social surveying, in general, and in satisfaction surveying more specifically, especially regarding local services (Stipak, 1979). Since the beginning of the 1990s, developments in the instruments available for social measurement and the levels of

research in university economics and marketing departments, together with the increased attention upon assessing customer orientation in the public sector, stimulated further interest in satisfaction surveying. The data generated by these surveys are often used to create benchmarks, to compare services, to evaluate the quality of the management or to reconsider funding. While focusing on government actions, several satisfaction indexes were created such as the American Customer Satisfaction Index (ACSI), the Canadian Common Measurements Tool (Schmidt and Strickland, 1998) and many local initiatives. These initiatives have been followed swiftly in Europe, as it is shown by a broad range of applications in the UK (Moore., 1998), by the Swedish Customer Satisfaction Index and by an increased attention in Central Europe (SIGMA, 1998). In The Netherlands, the Court of Audit performed a meta-analysis of client survey initiatives (Algemene Rekenkamer, 1997) and a fiscal monitor (Van Kruchten and Peereboom, 1997) together with instruments to guide local authority initiatives (Programmabureau Overheidsloket, 2000) have been developed. In Belgium, the use of a standardized instrument at the federal level, the Quality Barometer, has somewhat receded but, at the same time, a steering committee has been inaugurated within the Ministry of the Flemish Community to coordinate all internal initiatives (Bouckaert, 2001).

The digital transformation of government services significantly impacts citizen satisfaction through enhanced accessibility, transparency, and efficiency. As governments increasingly adopt digital interfaces, citizens experience a reduction in administrative burdens, which facilitates their engagement with public services. Research indicates that digital platforms not only streamline the evaluation process for public service delivery but also improve overall satisfaction levels among citizens. For instance, a study conducted in a Chinese city found that digital interfaces significantly boost citizen evaluations and satisfaction compared to traditional offline methods (Yang, Tang & Wen, 2022). Furthermore, the convenience of accessing services online provides positive perceptions of government operations, as citizens can engage with government agencies more effectively through direct communication channels (Hujran, Al-Debei, Al-Adwan, Alarabiat & Altarawneh, 2023). Additionally, the degree of digitalization within municipalities correlates positively with citizen satisfaction across various dimensions, including service performance and transparency (Bannister & Connolly, 2014). Ultimately, the shift towards digital government not only enhances service delivery but also empowers citizens by providing them with the tools to hold their governments accountable, thereby reinforcing democratic values and improving public trust.

2.5 UAE Digital Government and Citizens Trust and Satisfaction

Digital government has emerged as a pivotal force for transformation in the United Arab Emirates (UAE), aiming to enhance interactions between the government and its citizens, foster trust, and deliver efficient public services. The effectiveness of digital government initiatives is closely tied to citizens' trust and satisfaction, which serve as key indicators of their success.

In the context of the UAE, various factors significantly influence citizens' trust in government and their satisfaction with public service delivery within the framework of digital government. Research highlights the critical role of service quality and user experience as primary determinants in this area (Al Sayegh, Ahmad, AlFaqeeh & Singh, 2023; Ameen, Isaac & Mohammed, 2020; Al-Rahmi, 2017). Citizens' perceptions of service quality—encompassing dimensions such as responsiveness, reliability, ease of use, and personalized interactions are essential in shaping their overall satisfaction with government services. Furthermore, the perceived benefits and added value derived from engaging with digital government services are substantial contributors to citizens' trust (Hujran, Al-Debei, Al-Adwan, Alarabiat & Altarawneh, 2023; Alzahrani, 2018). Factors such as convenience, accessibility, time efficiency, and enhanced effectiveness play a pivotal role in shaping citizens' perceptions of the benefits associated with digital government initiatives.

The provision of high-quality information and transparency through digital government platforms is a critical factor influencing citizens' trust. Citizens prioritize access to accurate, up-to-date, and easily accessible information, as this motivates confidence, facilitates informed decision-making, and enhances transparency in governmental operations (AbdulKareem & Oladimeji, 2024; D'Hauwers, Van Der Bank & Montakhabi, 2020; Alenezi, 2017; Al-Khouri, 2012). Furthermore, the implementation of enhanced privacy, security, and data protection measures is essential for establishing and maintaining citizens' trust in digital government systems (Rizi & Seno, 2022; Mansoor, 2021; Al-Khouri, 2012; Yamin & Mattar, 2016). Citizens require assurance that their personal information is adequately safeguarded, their privacy is respected, and that strict security protocols are in place to ensure the integrity and confidentiality of their data. The interplay between transparency in information dissemination and the assurance of data protection not only enhances citizen engagement with government services but also serves as a foundation for building long-term trust in digital governance.

Literature review highlights the essential role of citizens' trust and satisfaction in the context of digital government services in the United Arab Emirates (UAE). Research indicates that several factors significantly influence citizens' satisfaction, including service quality, perceived benefits, information quality, privacy and security. Service quality

is a critical determinant, as it encompasses dimensions such as responsiveness, reliability, and accessibility of digital services. Studies have shown that high-quality service delivery correlates positively with increased citizen satisfaction (Núnez-Barriopedro, Penelas-Leguía, López-Sanz & Loranca-Valle, 2024; Alkraiji & Ameen, 2022). Furthermore, the perceived benefits of engaging with digital government services, such as convenience and efficiency, also play a significant role in shaping citizens' trust. Citizens are more likely to trust government services when they perceive tangible advantages from their use (Garritzmann, Neimanns & Busemeyer, 2023; Alenezi, 2017).

The existing literature on digital transformation highlights various factors that influence this process, particularly in relation to (ICT), accountability, transparency, and performance. For instance, ICT plays a pivotal role in facilitating digital transformation by enabling efficient service delivery and enhancing communication between governments and citizens (ElMassah & Mohieldin, 2020). Additionally, the literature emphasizes the importance of accountability and transparency in promoting trust and satisfaction among citizens regarding government services (Sofyani, Pratolo & Saleh, 2022). However, while numerous studies have explored these individual factors, there is a notable gap in research that systematically maps the relationships between the causes and effects of digital transformation. Furthermore, understanding the interplay between service quality, perceived benefits, and information transparency is crucial for comprehensively assessing the impact of digital transformation on citizen satisfaction. As governments continue to adopt digital solutions, it becomes imperative to explore how these transformations can be optimized to meet citizen expectations and enhance trust in public institutions. This research aims to fill the identified gap by examining these relationships in detail, thereby contributing valuable insights into the effectiveness of digital government initiatives.

Additionally, studies have examined digital government topics within the Gulf Cooperation Council (GCC) countries, addressing various aspects of government transformation, particularly those related to the e-participation index and the challenges of building trust. Trust has been identified as a crucial factor in evaluating the effects of digital government, along with cultural and social influences that many researchers have deemed significant (Li & Shang, 2023; Pérez-Morote, Pontones-Rosa & Núñez-Chicharro, 2020; Al Busaidy & Weerakkody, 2008; Al-Sobhi, 2010; Carter & Weerakkody, 2008; Khalil, 2011; Shafi & Weerakkody, 2009). Furthermore, factors such as responsiveness, efficiency, and reliability are considered essential for assessing the quality of e-government services (Almaiah & Nasereddin, 2020; Li & Shang, 2020; T. Rasool, 2018; W. Chutimasku, 2008). However, previous research has not adequately explored the relationship between government digital transformation and citizens' trust in government, as well as their satisfaction with the services resulting from this

transformation. This gap highlights an opportunity for further investigation into these critical connections, thereby extending our initial research focus in a more comprehensive manner.

Middle Eastern countries are not far from the declining trend of citizens' trust in governments. GCC countries' studies (Warner & Fargher, 2022; Kayyali, 2020; Cammett, Diwan & Vartanova, 2020) showed a decline in citizens' trust, which is an alarming sign for these countries. A few studies regarding digital government were conducted in Saudi Arabia (L Alzahrani,2018), Yemen (AA Al-Wazir, 2014), Oman (M Al-Busaidy, 2009), Kuwait (H Alenezi, 2017) Bahrain (M Mahmood, 2019), Qatar (V Weerakkody, 2011), and United Arab Emirates (AM Al-Khouri, 2012). However, only the case of Bahrain investigated the relation between e-government transformation and citizens' trust following a quantitative method, covering only citizens' opinions without engaging the government view of the issue. For Saudi Arabia, confidentiality, privacy, and security are identified as important factors to be considered by the government for running successful e-government services (Yamin and Mattar, 2016). For that our research second gap is presented.

Existing research predominantly concentrates on the factors influencing the adoption of e-government services in general, with limited attention given to investigating trust as a dependent variable or exploring the impact of government transformation on citizens' trust and satisfaction within GCC countries. While a study conducted for the Kingdom of Bahrain has shed some light on the subject, it carries several limitations. Considering these research gaps, the current study is motivated to delve into the transformation of digital government specifically and examine its influence on citizens' trust and satisfaction in the UAE from a dual perspective, encompassing both citizens and the government.

The United Arab Emirates aspires to establish itself as a leader across various sectors, including governance. Founded on December 2, 1971, the UAE is a relatively young nation with a current population of approximately 9.36 million (World Population Review, 2024). The government's strategic vision emphasizes digital transformation as a cornerstone for enhancing public services and improving citizen engagement.

UAE has implemented comprehensive strategies that focus on creating a proactive, personalized, and secure digital government ecosystem. This includes the establishment of integrated platforms and services that facilitate seamless interactions between government entities and citizens (Department of Government Enablement, 2023). Furthermore, the UAE aims to enhance its digital infrastructure by promoting collaboration between public and private sectors, thereby fostering innovation and improving operational efficiencies (Khalid, 2024).

As the UAE continues to evolve, its youthful demographic presents both opportunities and challenges in harnessing the potential of digital transformation. With a median age of approximately 33 years and a diverse population comprising various nationalities (Ammar, Kheir, Sundarakani & Manikas, 2024), the government is positioned to cultivate a digitally knowledgeable population that can actively participate in shaping the future of governance. The UAE's ambition to lead in every operational sector will rely on its ability to effectively implement digital initiatives that resonate with its citizens' needs and expectations.

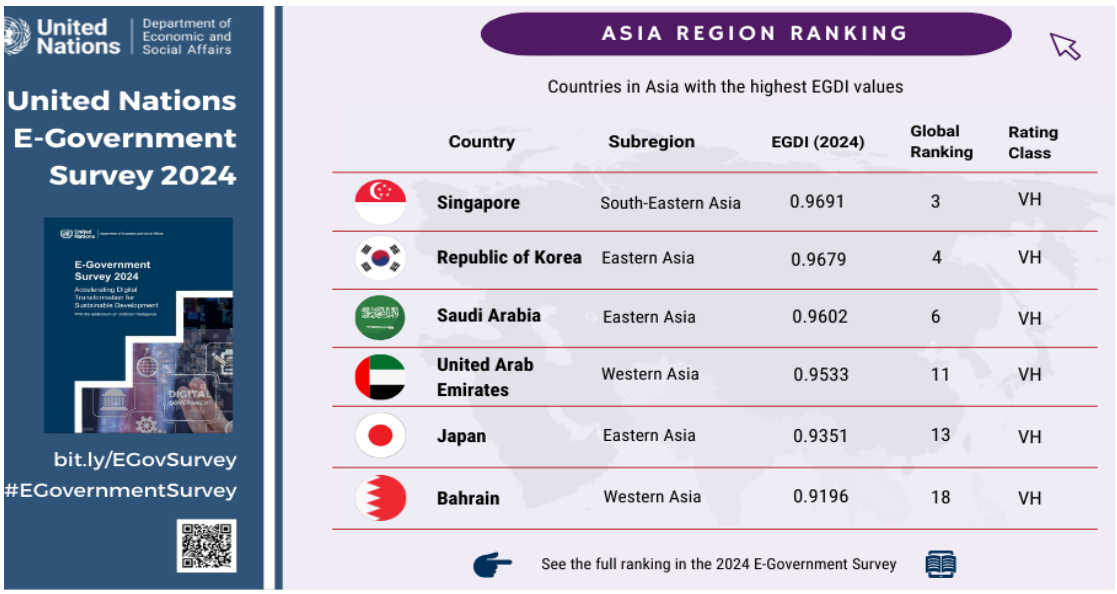


Figure 2.4 The Global Average E-Government Development Index (EGDI), UN E-Government Survey 2024

The UAE has demonstrated remarkable progress in digital governance, as evidenced by its performance in the United Nations E-Government Survey 2024, as shown in Figure 2.4. The UAE secured the leading position among Arab nations and achieved an impressive 11th place globally in the comprehensive E-Government Development Index (EGDI). Notably, the UAE advanced two positions in the global rankings compared to the previous survey, further cementing its status as a regional leader in digital government initiatives, surpassed only by Saudi Arabia in the Arab world (UN E-Government Survey 2024).

The UAE's exceptional performance is underscored by its perfect score of 100% in the Telecommunication Infrastructure Index (TII) and thus the first place in the world for this index, highlighting the nation's robust digital infrastructure. Furthermore, the UAE made significant strides in the Human Capital Index (HCI), climbing from 44th to 10th globally and achieving the top position in both Asia and the Arab region. These achievements reflect the UAE's progress by equipping its citizens with the necessary skills for a digitally transformed future and underscore the nation's dedication to advancing its e-government capabilities (Younus, Purnomo, Nurmandi, Hung, Anand & Khairunnisa, 2024).

The country has demonstrated a mixed performance in various sub-indices of the United Nations E-Government Survey. In the 'Online Service Index' (OSI), the UAE ranks 25th globally, trailing behind Qatar within the region. This index evaluates the accessibility and quality of online government services. The 'Content Provision' index, which assesses the availability of essential public information and resources through digital platforms, shows the UAE's commitment to transparency and information accessibility. However, in the 'Institutional Framework' sub-index, which evaluates critical aspects such as digital government strategy, organizational structure, legislation on information access and privacy, and open data policies, the UAE ranks 33rd globally, behind regional counterparts Oman and Bahrain. Notably, the UAE experienced a significant decline in the E-Participation Index, dropping from 18th to 37th place worldwide. This substantial fall suggests a need for enhanced citizen engagement strategies in the UAE's digital governance framework.
These rankings indicate areas for potential improvement in the UAE's digital government initiatives, particularly in institutional frameworks and citizen participation. As the country continues to advance its digital transformation efforts, addressing these aspects could further strengthen its position in global e-government rankings.

The UAE's trust and satisfaction metrics are further reinforced by its innovative approach to governance and public services. The country has implemented various initiatives to enhance transparency and accountability, such as the UAE Government's Strategy for the Future, which aims to make the UAE one of the best countries in the world by 2071 (UAE Centennial 2071). This strategy includes benchmarks for excellence in public services, economic growth, and social development, all of which contribute to higher trust levels among citizens and residents. A key aspect of this strategy is the emphasis on transparency and good governance. The UAE leadership has mandated programs for transparency and good governance across all organizations, recognizing the importance of these factors in attracting foreign direct investments and recovering from economic crises. This commitment is evident in initiatives such as the "Legislative Transparency" criterion, which is part of the Dubai Government Excellence Programme and aims to promote transparency across all government entities by ensuring that legislation is easily accessible and its objectives and impacts are clearly articulated (Dubai Government Excellence Program, DGEP).

Another significant factor contributing to the UAE's high trust and satisfaction is its investment in technological advancement. The country has been at the forefront of adopting cutting-edge technologies, including artificial intelligence, blockchain, and the Internet of Things (IoT), to improve the efficiency and quality of public services. For instance, the Smart Dubai initiative has transformed the city into a smart, sustainable, and connected hub,

enhancing the overall quality of life for its inhabitants. This initiative, launched in 2013 under the guidance of His Highness Sheikh Mohammed bin Rashid Al Maktoum, focuses on innovation, integration, and cooperation to provide a seamless, efficient, and personalized experience for residents, visitors, and businesses in Dubai (Hassebo & Tealab, 2023; Gugler, Alburai & Stalder, 2021). The Smart Dubai initiative has led to the development of digital platforms such as the Dubai Now platform, which allows residents and visitors to access more than 70 government services online, and features that enable users to track the progress of their transactions in real-time, reducing the time and effort required to complete government procedures. Additionally, the use of AI and data analytics has streamlined government processes, reducing bureaucracy and improving the overall efficiency of public services, which in turn fosters a business-friendly environment and attracts international businesses and talent (Al Qudah, 2024; Khan, Shael, Majdalawieh, Nizamuddin & Nicho, 2022).

However, despite these strengths, there are areas that require attention to maintain and enhance trust and satisfaction. One such area is the need for greater transparency in certain sectors, particularly in media and corporate governance (Ahli, Hilmi & Abudaqa, 2024; Ababneh, 2020). While the UAE has made significant strides in these areas, such as the introduction of corporate governance regulations and the supervision by entities like the Emirates Securities and Commodities Authority (ESCA) and the Central Bank of the UAE, there is still room for improvement to align with international best practices. Additionally, addressing the well-being and happiness of all demographic segments, as highlighted by the World Happiness Report (World happiness report 2023), is crucial for sustaining high levels of trust and satisfaction. The UAE's efforts in promoting corporate social responsibility (CSR) and community engagement, such as the CSR Regulation that includes a federal CSR fund and mandatory CSR reporting, are steps in the right direction but require continuous monitoring and improvement.

2.6 Chapter Summary

Chapter two presented a comprehensive literature review, focusing on existing models employed to investigate citizen trust in government and satisfaction in its service provision. This review synthesizes the key components and theories that informed the development of the conceptual model for this research. Chapter three will subsequently present the proposed conceptual model, along with the research hypotheses derived from the literature to guide the empirical investigation.

Chapter 3: Conceptual Model

3.1 Introduction

Chapter 2 examines the challenges faced by governmental entities in addressing the diminishing levels of trust among citizens over recent decades, along with the potential causes and effects of government digital transformation. A literature review highlights a significant gap in understanding how digital government transformation can counteract this decline in public trust and enhance satisfaction with government service provisions. The review identifies factors previously explored by researchers that influence citizens' trust and satisfaction, as well as the transformation of government into a more digitalized entity. This chapter presents hypotheses focused on the impact of digital government transformation on citizens' trust in government and their satisfaction with governmental services, with a particular emphasis on mapping the causes and effects of this digital transformation.

Moreover, this investigation employs two distinct research methods. The initial approach involves examining the citizens' perspectives, for which a quantitative research methodology has been selected. This choice is informed by the intention to investigate the phenomenon under study by means of testing existing theories, validating the conceptual model, and formulating a series of hypotheses.

3.2 Relationship between Technology and Digital Transformation of Government

Digital government represents the use of technologies to enhance government operations, specifically operations related to service delivery to citizens and businesses. Hiller and Belanger (2001) suggest that adopting technology through IT services within government operations will motivate and lead governments to achieve effective services in a transparent manner. Therefore, technology stands as a main pillar in presenting a transparent service to citizens.

Some researchers have argued that technology in government refers to IT (Karunia, Budiaji, Suzana, Dewi & Prasetyo, 2023; Dubey, Bryde, Dwivedi, Graham, Foropon & Papadopoulos, 2023). Other researchers (Suprayitno, Iskandar, Dahurandi, Hendarto & Rumambi, 2024; Rijal & Saranani, 2023; Bannister and Connolly, 2011; Waller and Weerakkody, 2016) have highlighted the need for technology in changing government policies by being a part of the policy design process. For that, it can be argued that changing government policies could also be considered as a transformation of government. Technology is the main starting point for achieving digital

government, which will then deliver a transformation of government services into a transparent operation expected to satisfy citizens and gain their trust in government.

Applications of ICT in government operations facilitate a decrease in the utilization of public resources, thus contributing to a more efficient operation. Literature on the economics of ICT in the public sector provides the most conclusive evidence on actual outcomes of digital technology applications. Effects such as reducing operational and labour costs in public administrations and making service delivery more practical, faster and cheaper are those where it is easier to observe direct change and therefore measure the difference in results before and after applying ICT applications.

From the above discussion, the following hypothesis is drawn:

H1a: *The adoption and integration of advanced technologies influence the extent and effectiveness of digital government transformation.*

3.3 Relationship between Transparency and Digital Transformation of Government

Transparency is a crucial element in influencing digital government transformation and therefore enhancing citizen trust and satisfaction in government. It is defined as the ability of outsiders to assess the true position of governmental activities, which aligns with arguments in the literature (Tavares & da Cruz, 2020; Saner, Yiu, & Nguyen, 2020). Studies have shown that transparency works closely with technological advancements to transform governmental processes. For instance, the use of digital technologies such as high-speed broadband, cloud computing, and the Internet of Things (IoT) makes government documents and data more accessible to the public (Yumame, 2024; Suri, 2022).

This integration of transparency with e-government services has been found to improve citizen satisfaction and trust in government. Research indicates that transparency, responsiveness, accessibility, and security are key determinants of satisfaction with e-government services, which in turn influence citizens' trust in government (Taufiqurokhman, Satispi, Andriansyah, Murod & Sulastri, 2024; Alkraiji & Ameen, 2022; Choi & Song, 2020). Therefore, the adoption of advanced technologies and the implementation of transparent digital government initiatives are essential for fostering a more trustworthy and efficient governmental system.

In the public policy sector, research has highlighted the potential of digital government transformations to enhance administrative effectiveness, public services, and the daily interactions between citizens and public

administration. These transformations are expected to lead to increased transparency, accountability, and ultimately, greater legitimacy in government operations (Mitchell, M., Moat & Kuchenmüller, 2023; Yuan, Dwivedi, Tan, Cham, Ooi, Aw & Currie, 2023). Studies have underscored the significance of digitalization in the public sector, emphasizing its role in improving the efficiency and quality of public services. For example, investigations by Savaget, Chiarini, and Evans (2019) suggest that digital government transformations can significantly enhance the administrative processes and public services, fostering a more transparent and accountable governance system.

However, measuring the impact of these transformations is complex due to the multifaceted nature of the changes involved. Despite this challenge, the core expectation remains that digitalization will drive positive reforms in the public sector. Specifically, blockchain technology has been identified as a key enabler of transparency in government activities.

On the other hand, transparency plays a pivotal role in driving digital government transformation, enhancing the trust and satisfaction of citizens in governmental services. The integration of digital transformation tools into governance has been instrumental in promoting transparency and accountability. For instance, technologies such as data analytics, blockchain, and digital communication platforms enable governments to provide real-time access to information, fostering a culture of openness and reducing the likelihood of corruption and mismanagement (Efunniyi, Abhulimen, Obiki-Osafiele, Osundare, Agu & Adeniran, 2024). Studies have shown that digital government policies significantly increase transparency and accountability by speeding up service processes, expanding access to information, and enhancing public participation. Research indicates that digital government initiatives can make government documents and data more accessible, allowing citizens to track government activities, financial expenditures, and policy implementations. This increased visibility into governmental processes not only builds public trust but also equips stakeholders with the information necessary to hold officials accountable for their actions (Hochstetter, Vásquez, Diéguez, Bustamante & Arango-López, 2023; Yumame, 2024).

The OECD Digital Government Policy Framework further emphasizes the importance of transparency in digital government transformation. It highlights that governments should adopt a "digital by design" approach, ensuring that transparency and accountability are core components of their digital strategies. This approach promotes a coherent and sustainable digital transformation of the public sector, capable of delivering better value and fostering more agile, transparent, and responsive governance.

From the above discussion, the following hypotheses is drawn:

H2a: *Transparency influences digital transformation of government.*

H2b: *Digital transformation influences transparency in government*

3.4 Relationship between Accountability and Digital Transformation of Government

Accountability goes along with transparency, and they are both considered as key elements for transformation of government (Shenkoya, 2023; Amaliah, 2015; Bannister and Connolly, 2011). Chen (2003) and subsequent studies highlight that accountability involves management being accountable to stakeholders, ensuring that their actions align with stakeholder expectations and values. This definition is supported by more recent research, which underscores that accountability is a complex, three-dimensional concept involving responsibility, transparency, and answerability (Sharon, Drach-Zahavy & Srulovici, 2022). In this regard, authors (Mansoor, 2021; Bannister and Connolly, 2011; Kim, 2009; Norquist, 2007) argued that accountability and transparency could influence the transformation of government as main outcomes that may eventually affect citizens' trust and satisfaction. For that we can find three theories for transparency and accountability.

The first theory, grounded in public administration, posits that Digital government transformation facilitated by ICT enhances the accessibility of government operations to all citizens. This heightened accessibility enables citizens to oversee and scrutinize the work and actions of public administration, thereby allowing them to hold the government accountable for its decisions and actions. This theory is supported by various researchers who emphasize the importance of ICT and digital transforming government operations in promoting accountability. Malodia, Dhir, Mishra, and Bhatti (2021) highlight how ICT enables real-time monitoring and feedback mechanisms, enhancing the transparency and accountability of public administration. Similarly, Kettl (2015) and Milakovich (2012) argue that ICT-driven government transformation leads to more open and responsive governance, where citizens can actively engage in and scrutinize government activities (Malodia, Dhir, Mishra & Bhatti, 2021; Kettl, 2015; Milakovich, 2012).

The second theory is institutional theory. ICT-enabled transformed government results in enhancing government transparency and accountability, which in turn affects the organizational aspect and institutional arrangements, as well as the way government institutions work and interact with their stakeholders, including citizens (Kim, 2009; Weerakkody, 2016).

The third theory, known as the principal-agent theory, outlines the relationship between the government as the agent and citizens as the principals. In this framework, citizens act as overseers of government performance, while the government is responsible for providing evidence-based progress reports (Kim, 2009). When a government undergoes transformation and adopts transparency, it ensures that critical information regarding services, processes, and procedures is readily available to citizens. This includes sharing performance reports, key performance indicators (KPIs) achieved, and details of cases handled. By making this information accessible, the transformed government inherently fosters accountability. Citizens are empowered to hold the government accountable based on the provided data, enhancing the overall transparency and trust in governmental operations (Van Thiel, Van Genugten, & Voorn, 2020; Van Thiel, 2016; Miller, 2005).

From the above discussion, the following hypotheses is drawn:

H3a: *Accountability influences digital transformation of government.*

H3b: *Digital transformation of government influences accountability*

3.5 Relationship between Positive Performance and Digital Transformation of Government

Digital government was developed by governments with the expectation that it would improve government performance, leading to citizen trust and satisfaction in government (Alkraiji & Ameen, 2022; Nawafleh, 2020; Al-Shafi and Weerakkody, 2008; Al-Shafi and Weerakkody, 2010; Srivastava and Teo, 2009). Furthermore, Hudson (2006) highlighted that performance plays a vital role towards trust in the government, which was also supported by other researchers (He & Ma, 2021; Beeri, Uster & Vigoda-Gadot, 2019; Lee, 2018).

The literature on government performance and its impact on citizen trust and satisfaction is extensive. Government performance is defined as the organization's ability to utilize its resources effectively and efficiently (He & Ma, 2021). This concept is closely tied to the transformation of government, which is expected to optimize the use of existing resources. Citizens perceive government performance as a key determinant of their satisfaction and trust. The successful operation of a government, therefore, directly affects the satisfaction of all stakeholders, including citizens (Shin & Jhee, 2021; Kim, 2009; Morgeson, 2011; Tolbert and Mossberger, 2006).

One theory in this context is the micro-performance theory, which links the relationship between government performance, citizen satisfaction, and trust in government. This theory, as outlined by Kampen (2003, 2006) and Van de Walle and Bouckaert (2003), posits that better government performance leads to satisfied citizens, which

in turn enhances trust in government. Recent studies have reinforced this theory, showing that citizen satisfaction with government services is a crucial mediator between government performance and trust. For instance, research by Alkraiji & Ameen, (2022) and Shin & Jhee, (2021) highlights that demographic factors, user service expectations, and perceived service quality influence satisfaction, which subsequently impacts trust in government. Moreover, the association between government performance, citizen satisfaction, and trust has been consistently supported by empirical findings. Studies such as those by Lanin and Hermanto (2019) and Song (2021) demonstrate that effective government performance in areas like public services, transparency, and anti-corruption efforts positively correlates with citizen satisfaction and trust.

From the above discussion, the following hypotheses is drawn:

H4a: *Positive Performance influences digital transformation of government.*

H4b: *Digital transformation of government influences positive Performance.*

3.6 Relation between Digital Transformation of Government and Citizens' Trust in Government, as well as their Satisfaction with Service Delivery.

Arguments on the effects of government digital transformation presented in literature demonstrate the general group of effects. These results are supported by empirical evidence strengthening the outcomes of recent digital technologies in government (Liva, Codagnone, Misuraca, Gineikyte and Barcevicius, 2020). The inferences focus on efficiency, productivity, cost savings, effectiveness, quality improvement, transparency, accountability and trust.

Research on the relationship between digital government and trust in government has yielded diverse findings. Some studies have focused on investigating the trust gap in governments, exploring factors that contribute to citizens' confidence in public institutions (Kaasa & Andriani, 2022; Kumagai & Ilorio, 2020; Bannister and Connolly, 2011; Grimmelikhuijsen, 2009; Morgeson, 2011; Teo, 2008; Tolbert and Mossberger, 2006). Two main perspectives have emerged from this body of research. One group of scholars argues that digital government initiatives can directly enhance trust in government (Li & Shang, 2023; Gil-Garcia & Flores-Zúñiga, 2020; Al-Shafi and Weerakkody, 2010; Srivastava and Teo, 2009; Welch, 2005; West, 2004). They posit that the implementation of e-government services can improve efficiency, accessibility, and citizen engagement, thereby fostering greater trust in public institutions. On the other hand, another group of researchers contends that trust in government can only be enhanced through increased transparency in information and services (Buell, Porter & Norton, 2021; Grimmelikhuijsen, 2009; McNeal, 2008; Morgeson, 2011; Pina and Royo, 2009). This perspective emphasizes

the importance of open government practices and clear communication in building public trust, suggesting that digital tools alone are insufficient without a commitment to transparency. These varying findings highlight the complex nature of the relationship between digital government initiatives and public trust, underscoring the need for further research to reconcile these perspectives and identify the most effective strategies for enhancing citizen trust in government through digital transformation.

Inferences are often not generalizable, and many factors were missed in studying the rise or decline of citizens' trust in their governments. For instance, many studies investigate certain components of citizen experience in digital government separately, which does not take into account the inherent complexities and the possible influence of many potential relationships amongst factors that contribute to citizen experience (Morgeson, 2011). Moreover, researchers do not agree on a set of factors that influence citizens' trust in governments, precisely the element related to digital government transformation that contributes to the change in factors such as trust.

From the above discussion, the following hypothesis is drawn:
H5a: *Digital transformation of government positively influences Trust in government.*

Satisfaction is the factor that is attached to trust in most of the studies and inferences. Satisfaction is mainly related to the service provision that is offered by governments after improvements done through digital transformation and since technology stands as a main pillar in presenting a transparent service to citizens, thus achieving citizens' satisfaction with governments. Technology is the main starting point of achieving digital government, which will transform government services to transparent operations, expected to satisfy citizens with government. Thus, the satisfaction factor comes after the influence of technology on digital transformation of governments and service delivery.

Digital government has been used by governments with the prediction that it will improve government performance, leading to citizen satisfaction with government (Al-Shafi and Weerakkody, 2008; Al-Shafi and Weerakkody, 2010; Srivastava and Teo, 2009; Tolbert and Mossberger, 2006; Welch, 2005; West, 2004).

From the above discussion, the following hypothesis is drawn:
H5b: *Digital transformation of government positively influences citizen's satisfaction with service provision.*

Morgeson (2011); Janssen, Rana, Slade & Dwivedi, (2021), investigated the relationship between the Internet integrated in government and citizens' trust, mediated by digital government and influenced by other factors.

However, the researchers could not establish a significant relationship with trust in the government. On the other hand, Morgeson and Petrescu (2011); Torkayesh, Ecer, Pamucar, & Karamaşa, (2021), developed an extended model, with related components of performance as a main pillar that achieves citizens' satisfaction.

Other studies highlighted the importance of transformation of government, which is predicted to lead to citizens' trust and satisfaction in government (Lukman & Hakim, 2024; Mansoor, 2021; Bannister and Connolly, 2011; West 2004). Similar results were attained by another research conducted by Teo (2008). It investigated the relationship between trust in government and digital government on one hand, and user satisfaction and intention to use digital government, on the other, using trust as the independent variable rather than dependent.
It can thus be concluded that satisfaction and trust affect citizen engagement with the government. Satisfaction is influenced by performance, and performance is affected by a number of aspects, including technology that is used in the government. While trust is influenced by transparency and accountability which are affected by government digital transformation as well. Therefore, digital government and technology need to be linked to transformation. However, transformation without transparency and accountability is unlikely to improve trust (Bannister and Connolly, 2011). Thus, transformation must be influenced by transparency and accountability (Bannister and Connolly, 2011; Kim, 2009). Transformation here is considered an independent variable that is expected to increase citizens' engagement with their governments, which is the dependent variable. However, the relationship between independent and dependent variables is affected by mediating variables (Morgeson, 2011).

From the above discussion, the following hypothesis is drawn:

H5c: *Digital transformation influences trust in government mediated by satisfaction in government.*

H5d: *Digital transformation affects satisfaction with government mediated by trust.*

3.7 The Proposed Conceptual Model

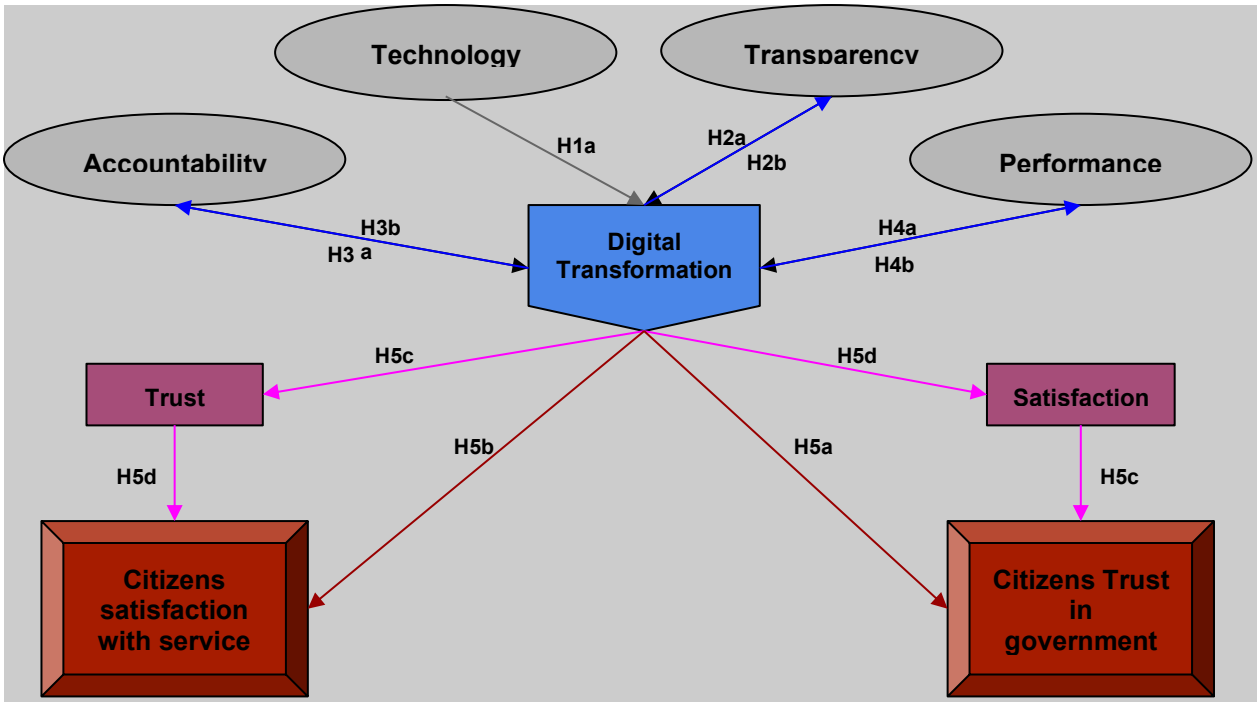


Figure 3 Proposed Hypotheses Framework

Figure 3 provides a comprehensive visual representation of the hypothesized relationships that constitute the structure of our conceptual model. The model is organized into two main parts. The first part illustrates the factors influencing digital government transformation, with Hypothesis 1a positing that technology plays a significant role in this transformation. Additionally, Hypotheses H2a and H2b explore the correlations between transparency and digital government transformation, while Hypotheses H3a and H3b examine the relationship between accountability and digital government transformation. Similarly, Hypotheses H4a and H4b suggest correlations between performance and digital government transformation.

The second part of the model focuses on the outcomes of digital government transformation. Hypothesis 5a posits that digital government transformation positively influences citizens' trust in government, while Hypothesis 5b suggests that it also enhances citizens' satisfaction with government service provision. Furthermore, two mediation hypotheses are included: Hypothesis 5c proposes that the relationship between digital government transformation and trust is mediated by citizens' satisfaction, and Hypothesis 5d suggests that the impact of digital government transformation on citizens' satisfaction in service provision is mediated by their trust in

government. This conceptual model thus offers a structured framework for examining the complex interactions between digital government transformation, its antecedents, and its effects on citizen trust and satisfaction.

3.8 Chapter Summary

This chapter presents a conceptual model, and associated hypotheses derived from an extensive literature review. While existing research has predominantly focused on technical aspects, service quality, usability, and adoption rates of ICT, enabled transformation projects, these studies have had limited practical impact on core government functions and have not conclusively demonstrated improvements in citizen trust and satisfaction with government services.

This identified gap underscores the critical need for a deeper understanding of how government transformation influences citizens' trust and satisfaction. To address this, the present research proposes a comprehensive conceptual model that extends beyond purely technical considerations. The proposed model examines the intricate relationship between government transformation and citizen trust in government, as well as satisfaction with service provision. It incorporates key elements such as: Digital government initiatives, technology adoption, citizen expectations, transparency, accountability, government performance and citizen satisfaction.

By integrating these multifaceted factors, the model aims to provide a more holistic understanding of the complex dynamics between digital government transformation and its impact on citizen perceptions and experiences. This approach seeks to bridge the gap between technological implementation and tangible improvements in government-citizen relationships, offering insights that can inform more effective and citizen-centric digital transformation strategies in the public sector.

Chapter 4: Research Methodology

4.1 Introduction

The main target of this research is to investigate the causes of digital transformation of government and its effect on citizens' trust and satisfaction using a mixed method along with eleven hypotheses. In this chapter, the research methodology and methods are presented as well as other elements such as the research philosophy, design and process.

The research is explanatory and the scientific paradigm for this study is rooted in positivism. A mixed method approach will be employed for this research, which will target two types of audience. The first targeted category are the residents of the United Arab Emirates, who will be selected randomly through the development and distribution of an online survey. While the other category is represented by policy makers who will be approached through semi-structured interviews.

4.2 Research Philosophy

According to Collis & Hussey (2009), a research paradigm is a philosophical framework that guides how scientific research could be carried out. New research paradigms have emerged over time due to changes in people's ideas, which may or may not lead to inadequacies of the earlier paradigms. This perspective on research paradigms aligns with more recent discussions in the field. For instance, Pretorius (2024) emphasizes that understanding and choosing a research paradigm is crucial as it shapes the entire research process, from framing research questions to interpreting results. The evolution of research paradigms reflects the dynamic nature of scientific inquiry and the ongoing dialogue about how best to approach and understand complex phenomena.

There are three key research philosophical approaches: positivist, interpretive, and critical research (Mingers, 2001; Orlikowski and Baroudi, 1991; Kekeya, 2019). While positivist and interpretive approaches have been widely used across various disciplines, the critical approach has gained increasing attention in recent years (Pretorius, 2024; Scotland, 2012). The positivist approach is often considered the most popular, particularly in fields such as natural sciences and quantitative social research (Pham, 2018; Yin, 2018). However, interpretive approaches have become more prevalent in qualitative research, especially in social sciences and humanities (Thanh and Thanh, 2015). Critical research, while less common, is particularly applicable to studies focusing on

power dynamics, social justice, and systemic inequalities (Horkheimer, 2002; Myers and Klein, 2011). Each approach offers unique perspectives and methodologies, allowing researchers to address diverse research questions and contexts.

Positivist studies generally attempt to test theory, seeking to increase the predictive understanding of phenomena. Several researchers classified social science research as positivist if there was evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from the sample for a stated population. It is quantitative and deductive since it uses general results to attribute properties to explicit instances. However, scholars have argued that the following three techniques of scientific methods influence the positivist stance - reductionism, repeatability and refutation (Popper, 1994; Mintzberg, 1979; Lincoln & Guba, 2000; Lee 1991; Orlikowski & Baroudi, 1991; Easterby-Smith et al, 2002; Saunders, 2007; Johnson & Onwuegbuzie, 2011; Iofrida, De Luca, Strano, & Gulisano, 2018; Kunisch, Denyer, Bartunek, Menz & Cardinal, 2023). On the other hand, interpretive approaches attempt to understand a certain phenomenon through accessing the 'meaning' participants have about the phenomenon (Orlikowski and Baroudi, 1991; Walsham, 1995; Williams, 2021; Ivey, 2023). It is mainly associated with beliefs and intentions, as opposed to positivism, which is based on figures and measures (Orlikowski and Baroudi, 1991; Weber, 2004; Howe, 2009). The qualitative research approach has used, for example, case studies, interviews and ethnographic methods (Weber, 2004; Thelwall & Nevill, 2021; Adeniran & Tayo-Ladega, 2024). Both positivism and interpretive approaches are explaining or reflecting reality, whereas the critical research approach is about developing/creating/changing reality and promoting emancipation (Orlikowski and Baroudi 1991; Niehaves and Bernd, 2006; Cantelmi, Di Gravio & Patriarca, 2021; Strunk, 2023). Additionally, it questions or criticizes the reality, and the knowledge gained in an effective and efficient way. As for the methodology employed in critical research, there is no single agreed methodology; however, it is close to some extent to the interpretive approach (Niehaves and Bernd, 2006; Patriarca, 2021; Strunk, 2023).

Thus, following these definitions of philosophy approaches, it is concluded that the most appropriate approach for this study is positivism, since this research is explaining a reality and not attempting to create a new reality and therefore the critical philosophy approach cannot be used. Moreover, it is about understanding and investigating a phenomenon by testing a current theory and not about understanding a certain phenomenon through accessing the participants' view that they have about the phenomenon, as such, the second research philosophy that is the interpretive is eliminated.

This research adopts a quantitative research methodology, as it develops and validates a conceptual model that is building upon previous theoretical frameworks and models, while the qualitative approach conducted is to strengthen the hypothesis test and not to create another view of the study. The research is related to investigating the influence of transformation of government on citizens' trust and satisfaction in government. For that, the research aim, objectives, research questions, conceptual model and hypotheses indicate that positivism is a more suitable approach for this research.

4.3 Research Design

Research is valid when the results among the study participants represent true findings among similar individuals outside the study and research design is the conceptual blueprint within which research is conducted, preparing an action plan that constitutes an outline of collection, measurement and analysis of data (DMI Akhtar, 2016; Kyngäs, Kääriäinen & Elo, 2020). Before selecting research methodology, collecting and analyzing the data, it is very critical to agree upon the appropriate research design to be followed throughout the different phases of this research. The following will be the elements of the research design.

This research adopts a mixed-methods approach, comprising quantitative and qualitative phases, to comprehensively address the research objectives. The quantitative stage employs a cross-sectional survey technique to collect numerical data from citizens. This approach is aligned with the research's scope, objectives, and budget constraints, making it a suitable choice for obtaining representative information (Bryman and Bell, 2007; Sekaran, 2003; Hendren, Newcomer, Pandey, Smith & Sumner, 2023).

The qualitative phase employs expert interviews to gain in-depth insights into digital transformation processes, focusing on government decisions and implementation actions. Expert interviews are chosen to capture the technical, process, and interpretative knowledge of individuals involved in these processes (Bogner, Littig, and Menz, 2009; Döringer, 2021; Von Soest, 2023). Purposive sampling is utilized in the qualitative phase, employing deliberate selection criteria with a transparent approach to participant choice (Ritchie, 2013; Khoa, Hung & Hejsalem-Brahmi, 2023; Lim, 2024). This method ensures that the selection process is clearly documented and justified, allowing for a comprehensive understanding of the sampling rationale and its alignment with the research objectives.

In summary, the research utilizes a cross-sectional survey for quantitative data collection from citizens and expert interviews with purposive sampling for qualitative insights from key individuals involved in digital transformation

processes within the government. This methodological approach ensures a comprehensive exploration of the research questions and aligns with the objectives of the study.

4.3.1 Research Purpose

The purpose of research is to find out what is known, what is not and what we can develop further. In this way, scientists can develop new theories, ideas and products that shape our society and our everyday lives. Although research can take many forms, there are three main purposes of research: exploratory, descriptive, and explanatory (Robson, 2002; Sekaran, 2003; Taherdoost, 2022)

Exploratory research is the first research to be conducted around a problem that has not yet been clearly defined. Exploration research therefore aims to gain a better understanding of the exact nature of the problem and not to provide a conclusive answer to the problem itself. This enables us to conduct more in-depth research later on. It comes with qualitative research methodology, where interviews and focus groups are often used (Swedberg, 2020; Casula, Rangarajan & Shields, 2021).

Descriptive research expands knowledge of a research problem or phenomenon by describing it according to its characteristics and population. Descriptive research focuses on the 'how' and 'what', but not on the 'why'. In opposition to exploratory research, the key variables are defined, and either a quantitative or qualitative approach can be used (Atmowardoyo, 2018; Doyle, McCabe, Keogh, Brady & McCann, 2020).

Explanatory research, also referred to as causal research, is conducted to determine how variables interact, i.e. to identify cause-and-effect relationships. Explanatory research deals with the 'why' of research questions and is therefore often based on experiments. In explanatory research, the key variables and relationships are defined, and a quantitative research methodology is associated with it (Remler & Van Ryzin, 2021).

In addition to investigating the relationship between transformation of government and citizens' trust and satisfaction in government, this research identifies factors that influence the digital transformation of government and determines the relationships among these factors. For that, a conceptual model along with hypotheses is developed, validated and tested. Related to the previous definitions, the purpose of this research is explanatory, as it explains and predicts relationships between defined variables and hypotheses of the conceptual model developed above.

4.3.2 Unit of Analysis

This research investigates the influence of government digital transformation on citizens' trust and citizens' satisfaction with the government. However, as mentioned before, the research investigates this relation relying on two approaches in order to better understand the effects of the digital transformation of government on citizens' trust. Using these two approaches, we will be able to generate solid outcomes that can be reliable, to understand this relation in depth and therefore build a remarkable literature for future investigations and studies.

The first approach in our investigation scrutinizes citizens' perspectives regarding trust in relation to e-government transformation; hence, our unit of analysis is composed of the residents of the United Arab Emirates. On the second approach, where the relation is investigated through a government perspective, the unit of analysis will be the policy makers and rulers of the United Arab Emirates.

4.3.3 Research Strategy

A research strategy is defined as the process of collecting and interpreting data with clear objectives. Easterby-Smith (2012) and Johannesson, Perjons, Johannesson & Perjons (2021) has stated that research strategy is a general plan on how to answer the research question that has been set by a researcher. For that, there are two types of research data, which are primary and secondary. Primary research data represents the data collected by the researcher for addressing the research aim, objectives and questions to be answered. Surveys, case studies, laboratory experiments and action research, for instance, can be used to collect such data. The second type is secondary data, where the data collected is not generated directly to the research at hand, such as published summaries, reports and statistics. Secondary data may be suitable when there is a need to conduct comparative research nationally or internationally. The selection between primary and secondary data sources is guided by the specific research questions under investigation. For this study, primary data collection has been deemed the most appropriate method to address the research questions effectively, ensuring the acquisition of relevant information.

Yin (2018) added that there are five key research strategies in social sciences based on three conditions, which are: Research question, Control on behavioural events, and focus on contemporary events. These strategies are experiments, surveys, archival analysis, histories and case studies. The experimental method involves the process of variable testing where the impact of one variable can be seen with other variables. Similar to this

Malhotra (2017) has suggested that this strategy is used when researchers examine cause and effect relationships among variables. The survey strategy is popular in the social sciences and associated with deductive research approaches (Saunders, Lewis & Thornhill 2009). In this research strategy information is collected using interviews or pre-designed questionnaires. The archival analysis strategy documents the occurrence and prevalence of specific phenomena by examining existing records and documents. While this approach can provide valuable historical insights, it may present challenges when applied to certain research areas due to limitations in data availability, comprehensiveness, and relevance to contemporary research questions.

Given the mixed-method approach adopted in this study, which targets both citizens and policymakers, the survey strategy emerges as the most appropriate choice. This strategy aligns well with the research design, where the unit of analysis is the targeted population. The use of survey questionnaires for citizens and interviews for policymakers allows for a comprehensive data collection process, enabling the gathering of both quantitative and qualitative data to address the research questions effectively (Creswell, 2018; Ponto, 2015). This approach facilitates a nuanced understanding of the phenomena under investigation, capturing diverse perspectives from different stakeholder groups.

4.3.4 Time Dimension

Taking into consideration the selection of the survey strategy along with the aim, objectives, questions, limited budget and timeframe defined for the accomplishment of this research, the best choice is to apply a cross-sectional survey rather than a longitudinal survey.

It is important in mixed methods to consider the timing of the qualitative and quantitative data collection, whether it will be in phases (sequentially) or gathered at the same time (concurrently) (Creswell, 2009). When the data are collected in phases, either the qualitative or the quantitative data can come first. It depends on the initial intent of the researcher. When qualitative data are collected first, the intent is to explore the topic with participants at sites. Then the researcher expands the understanding through a second phase in which data are collected from a large number of people (typically a sample representative of a population). When data are collected concurrently, both quantitative and qualitative data are gathered at the same time and the implementation is simultaneous. In many projects, it may be unworkable to collect data over an expanded time period. In this case, it is more manageable to collect both quantitative and qualitative data at roughly the same time; when the

researcher is in the field collecting data, it is preferable to do the collection concurrently rather than to revisit the field multiple times for data collection (Creswell, 2018).

In this research, the data collection process is done through two phases. The first phase focuses on quantitative data, where a sample of the population is selected and questioned using a survey. This is followed by the collection of qualitative data with semi structured interviews.

On the other hand, how the data are mixed has received considerable recent attention (Kuckartz & Rädiker, 2023; Gillespie, Glăveanu & de Saint Laurent, 2024). Mixing means either that the qualitative and quantitative data are actually merged on one end of the continuum, kept separate on the other end of the continuum, or combined in some way between these two extremes.

The two databases might be kept separate but connected; for example, in a two-phase project that begins with a quantitative phase, the analysis of the data and its results can be used to identify participants for qualitative data collection in a follow-up phase. In this situation, the quantitative and qualitative data are connected during the phases of research. Connection in mixed methods research means mixing the quantitative and qualitative stages where research connects between the data analysis of the first phase of research and the data collection of the second phase of research. In another study, the researcher might collect both quantitative and qualitative data concurrently and integrate or merge the two databases by transforming the qualitative themes into counts and comparing these counts with descriptive quantitative data. In this case, mixing consists of integrating the two databases by actually merging the quantitative data with the qualitative data. In a final scenario, the researcher might have a primary aim to collect one form of data (say quantitative) and have the other form of data (say qualitative) provide supportive information. Neither integrating the data nor connecting across phases is being utilized. Instead, the researcher is embedding a secondary form of data within a larger study having a different form of data as the primary database. The secondary database provides a supporting role in the study. This data processing is used in this research, where collection of quantitative data relates to the conceptual model, while qualitative data comes to support the study and the hypothesis proposed.

4.3.5 Stages of the Research Process

The research process is the method by which research is planned and conducted, and usually it is essential to have the same style, regardless of where and by whom the research is being conducted, or the purpose of the research. There are many research tools available to the researcher but they all share two objectives (Lacey,

2010): to assist the researcher to design the research in a way that enables the research question to be answered; and to enable the researcher to conduct the research in a systematic manner to ensure that the findings are scientifically rigorous and have genuine potential for practical application (Gerrish & Lacey, 2010).

This research is organized into several key stages. The process begins with an introduction that provides a broad overview, explains the rationale for selecting the subject and country, identifies research gaps, and outlines the research questions, aims, and objectives. The next stage involves a comprehensive review of existing literature on digital government, including its causes and effects, which helps clarify the research problem, gaps, aims, and objectives. This review also highlights factors influencing digital government transformation and citizens' trust and satisfaction.

Following the literature review, a conceptual framework is developed, informed by prior studies. This stage introduces hypotheses and supporting theories for each construct within the framework. Subsequently, the research methodology is detailed, covering the philosophical approach, research procedures, and the mixed-methods design used—specifically, a survey to capture citizens' perspectives and semi-structured interviews with policymakers. Both citizens and policymakers in the UAE are included as units of analysis.

The next stage involves analyzing the collected data using appropriate modelling techniques to validate the conceptual framework and test the hypotheses. This is followed by a discussion of the findings, where results are interpreted in relation to the literature and practical implications are considered. The final stage summarizes the theoretical and practical contributions of the research, acknowledges its limitations, suggests directions for future research, and revisits the original aims and objectives.

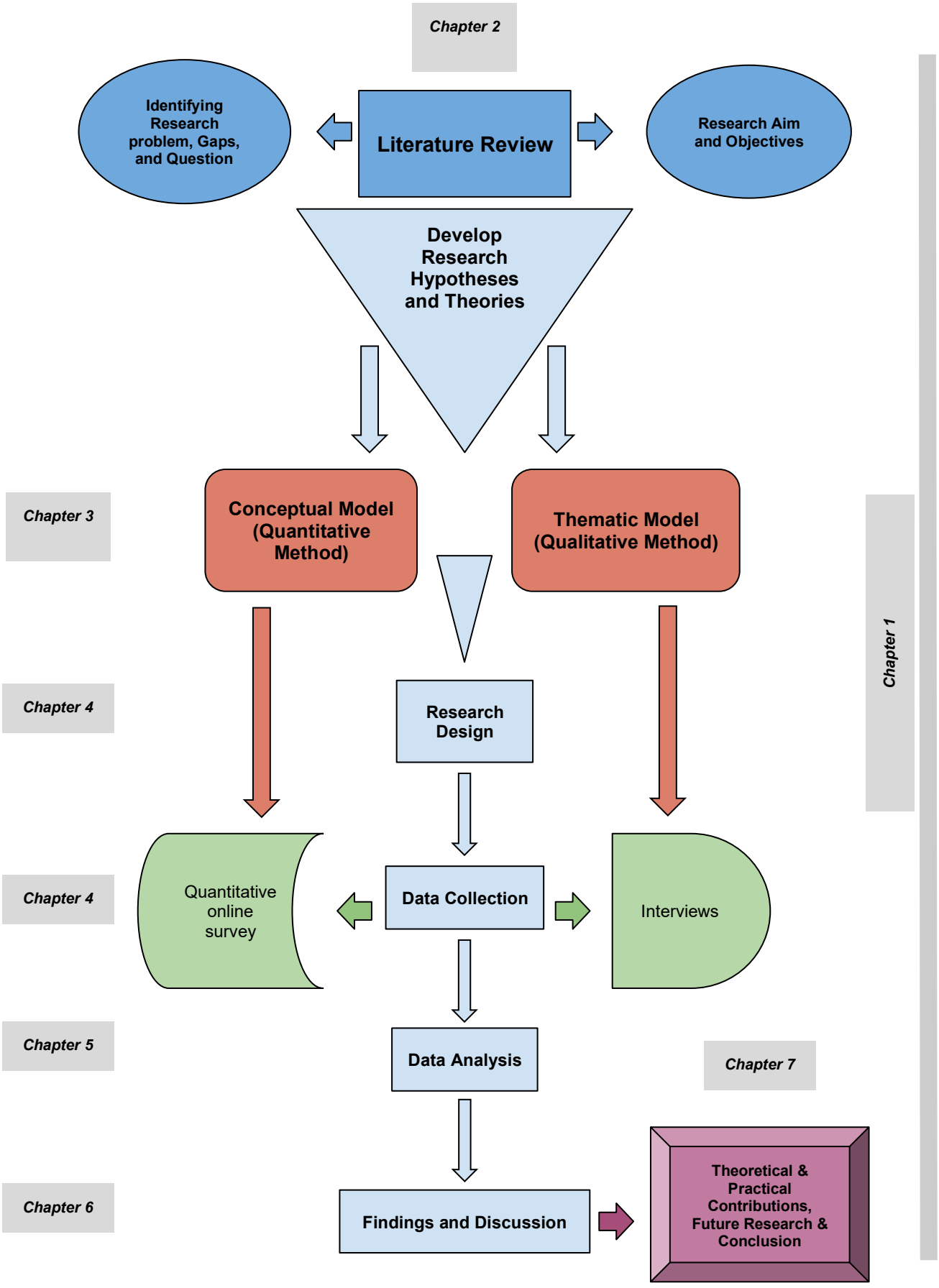


Figure 4.1 Stages of the Research Process

4.4 Research Methods

There are three common sets of methods used for conducting research: qualitative, quantitative and mixed methods (Johnson & Christensen, 2024; Bryman and Bell, 2007). The common way in choosing the appropriate research methods is based on a number of factors, such as the nature of research, the problem to be solved, the type of data required and the accessibility to the data (Tracy, 2024), taking into consideration that a researcher may use one or more research methods (Tracy, 2024).

The quantitative method deals with statistics and numbers to explain a phenomenon by normally testing a theory (Creswell, 2009; Malhotra and Birks, 2007; Zikmund and Babin, 2014). It is associated with hypotheses, surveys and questionnaires (Bryman, 1992; Denscombe, 2003). The qualitative method, on the other hand, is used to explore and understand a certain phenomenon for developing a theoretical model (Punch, 2005; Walsham, 2006). The qualitative method is associated with words, explanations, case studies, interviews and observations (Bryman, 1992; Denscombe, 2003).

This research is aiming to investigate the relation between digital government transformation and citizens' trust and satisfaction in their government, going through several elements and factors integrated in understanding this phenomenon. However, the investigation will undertake two methods for assessment. The first is investigating citizens' perspectives and a quantitative research methodology will be adopted since the phenomenon discussed in this research will be studied through testing the current theory, validating the conceptual model and proposing a set of hypotheses. However, as many studies missed the government and policy makers perspective, a qualitative analysis is crucial to understand the ground of the phenomena through a systematic literature review and thematic analysis.

The choice to employ qualitative interviews rather than quantitative questionnaires for capturing policymakers' perspectives is rooted in the need for depth, flexibility, and nuanced understanding in policy research. Given the complex nature of policymaking and the limited number of participants available (8 in this case), interviews offer several advantages. They allow for in-depth exploration of complex issues, provide flexibility to adapt questions and explore unexpected topics, and enable the capture of complex perspectives that might be lost in structured questionnaires. This approach is particularly valuable when working with a small sample size, as it maximizes the richness of data obtained from each participant. The semi-structured nature of interviews also allows for a

more comprehensive understanding of the policymaking process, decision-making rationales, and contextual factors influencing policy implementation. In this research context, where access to policymakers is limited, the qualitative interview method ensures that the perspectives of these key stakeholders are captured in sufficient depth and detail to inform meaningful analysis and insights.

4.4.1 Quantitative Analysis

The adoption of a quantitative methodology in this research aligns with comparable studies previously conducted in similar research (e.g. Morgeson, 2011; Teo, 2008; Tolbert and Mossberger, 2006) and including recent works by Venkatesh (2021), Dwivedi (2023), and Rana (2022), among others.

Quantitative research methods have been adopted based on a number of reasons, as explained here. This study examines the impact of government digital transformation on citizens' trust and satisfaction with governmental services. The research aims to advance current theoretical understanding by validating a conceptual model and testing associated hypotheses. Through a rigorous methodological approach, this investigation explores citizens' perspectives on trust and satisfaction in relation to the ongoing process of digital government transformation. By analyzing these relationships, the study seeks to contribute to the existing body of knowledge and provide insights into the effectiveness of digital governance initiatives in fostering positive citizen-government interactions.

Deductive reasoning is used to test theory for understanding a certain phenomenon that is in question (Orlikowski and Baroudi, 1991). It is mainly associated with facts, figures, measures, and numbers as opposed to researchers' beliefs and values (Bryman and Bell, 2007; Howe, 1988; Weber, 2004). We use deductive reasoning as a way to investigate the relationship between two factors connected in the scope of public administration and citizens' responses. The research methodology that is presented in this research includes, amongst other elements, deductive research philosophy and design.

4.4.2 Qualitative Analysis

Qualitative research has gained significant recognition across disciplines for its ability to provide rich, contextual insights that complement quantitative approaches. This method offers a unique perspective in research by collecting and analyzing non-numerical data, such as text, video, or audio, to understand complex phenomena, opinions, and experiences (Bhandari, 2020). In health professions education, including pharmacy, qualitative approaches have proven valuable for generating "well-grounded, rich descriptions and explanations of processes

in identifiable local contexts" (Castleberry, 2019). The descriptive nature of qualitative research allows for the construction of a holistic picture in natural settings, offering insights that extend beyond numerical data alone. By integrating qualitative methods, researchers can add depth and nuance to their studies, uncovering dimensions that might be overlooked through purely quantitative measurements (Pathak, 2013).

In this research and aiming to support the testing of theory and hypotheses, a qualitative method will be employed to capture the government's view of citizens' trust and satisfaction in relation to digital government transformation. As a second step in this investigation, this method will strengthen our understanding of this subject, and all the factors integrated within the process on a different level of interpretation. This topic is present in only a few studies in literature and there is no real investigation reporting the view of government officials about this relation. The same goes for reports that did not introduce any valuable quantitative analysis or numerical evidence that can support any theory regarding trust in government in specific. My aim is to build reliable literature through investigating the effect of digital government transformation on citizens' trust and satisfaction from the government officials' perspective. Moreover, it is an objective to reach a deep understanding of this perspective through researching policy makers' decisions, objectives and future views. Gaining this understanding will make our research more accurate, covering both perspectives of the process.

Despite not having an analysis guidebook that fits every research situation, there are general steps that can be used to make sure that our thematic analysis is systematic and thorough. A model of qualitative data analysis can be outlined in five steps: compiling, disassembling, reassembling, interpreting, and concluding.

Thematic analysis is a method for identifying and analysing patterns of meaning in a dataset (Braun & Clarke, 2006). It illustrates which themes are important in the description of the phenomenon under study (Daly, 1997). Since a thematic analysis refers to themes, the notion of a theme must be examined more closely. A theme refers to a specific pattern of meaning found in the data. It contains clear content, which is something directly observable such as mentions of certain marks across a series of interview transcripts. Thematic analysis has recently been recognised as a method in its own right. Previously it was widely used in psychology and beyond, often without acknowledgement or demarcation (Boyatzis, 1998; Braun & Clarke, 2006). Thus, our research steps are explicit, with a systematic literature analysis about citizens' trust and satisfaction in relation to digital government transformation, and then we use thematic methods to verify the theory and hypotheses drawn.

4.4.3 Sampling Process

Sampling is the statistical process of selecting a subset (called a "sample") of a population of interest for purposes of making observations and statistical inferences about that population. Social science research is generally about inferring patterns of behaviours within specific populations. We cannot study entire populations because of feasibility and cost constraints, and hence, we must select a representative sample from the population of interest for observation and analysis. It is extremely important to choose a sample that is truly representative of the population so that the inferences derived from the sample can be generalized back to the population of interest.

4.4.4 Target Population

The target population can be referred to as the target audience or unit of analysis. Thus, in this research it is divided into two due to the mixed method used (described in section 4.3.2).

4.4.5 Sampling Frame

A sampling frame is a list of the actual cases from which a sample is drawn. The sampling frame must be representative of the population (Taherdoost, 2016). A sampling frame can be also defined as a full list of all units in the population from which the sample is drawn (Bryman and Bell, 2007; Saunders, 2011; Lohr, 2021). For this research, the target population are citizens and hence the sample frame will be residents living in the United Arab Emirates. Furthermore, because of the mixed method strategy used, the other unit of analysis will be the policy makers and for that, the sample frame will be policy makers in the government of the United Arab Emirates.

4.4.6 Sampling Technique

In general, sampling techniques can be divided into two types: Probabilistic or random sampling and non-probabilistic or non-random sampling. However, each technique involves several sub-sampling techniques as shown in Figure 4.2

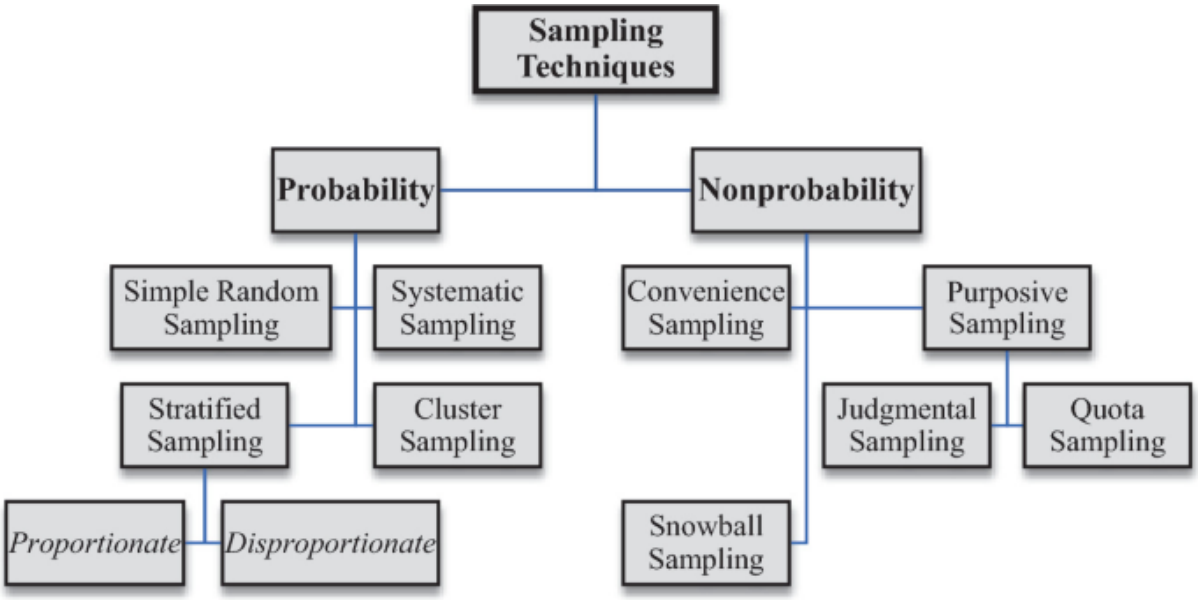


Figure 4.2 Types of Sampling Technique (Islam & Aldaihani, 2022)

This research as stated many times before is split into two stages according to the mixed method used. In the first stage, the perceptions of citizens are investigated using probability sampling to ensure equal opportunity of selection among participants. As for the sub-type of probability sampling, simple random sampling is selected to include as much population in this research.

In order to increase the number of participants, random sampling is normally used in conjunction with data collection techniques such as online surveys, postal surveys and/or telephonic surveys (Saunders, 2011). Since the majority of the citizens in the United Arab Emirates are well educated and use the Internet regularly, this research uses online random sampling for data collection. Similar research conducted previously have used the same sampling technique (Dashti., 2009; Nam and Sayogo, 2011; Weerakkody., 2013). Moreover, in order to enhance the robustness of the sampling process, particularly in the context of my self-funded thesis conducted independently from the University of Minho, I have leveraged my professional connections in the United Arab Emirates (UAE). Specifically, I have cultivated a collaborative relationship with an acquaintance who owns a statistical firm in the UAE. This firm possesses an extensive database encompassing the demographic profile of residents across the nation. To ensure the representativeness of the sample, we adopted a stratified sampling approach, delineating our search into three distinct clusters corresponding to the primary administrative divisions of the UAE: Dubai, Abu Dhabi, and Sharjah. Subsequently, we plan to disseminate approximately 800 email invitations and WhatsApp links, with the objective of eliciting a response from over 300 participants. This targeted methodology is designed to capture a significant cross-section of residents residing within these pivotal states, thereby enriching the diversity and depth of our sample pool.

In the second stage of the research, non-probability sampling is used to gather policy makers' perceptions. Non-probability sampling is often associated with case study research design and qualitative research. Therefore, this technique tends to focus on small samples and is intended to examine a real-life phenomenon, not to make statistical inferences in relation to the wider population (Yin, 2003; Lehdonvirta, Oksanen, Räsänen & Blank, 2021). A sample of participants or cases do not need to be representative, or random, but a clear rationale is needed for the inclusion of some cases or individuals rather than others. For the sub sampling, quota sampling is the best fit for this research, where quota sampling is a non-random sampling technique in which participants are chosen on the basis of predetermined characteristics so that the total sample will have the same distribution of characteristics as the wider population (Davis, 2005; Rahman, 2023).

4.4.7 Sample Size

The sample size should be carefully fixed so that it will be adequate to draw valid and generalizable conclusions. The fixation of the adequate sample size requires specific information about the problems under investigation in the population under study. And also, the sub classifications of samples required for analysis, variation, precision, availability and cost of investigations (Singh & Masuku, 2014; Rahman, 2023). In general, the sample size used in a study is determined based on the cost of data collection and based on sufficient statistical power.

4.4.8 Data Collection

For this study and according to the unit of analysis chosen, which is the residents of the United Arab Emirates, the suitable type of data would be the primary data that would be collected directly through questionnaires. Moreover, as the research also includes another unit of analysis represented by policy makers, primary data will be the most appropriate data as well.

This research employs a mixed-methods approach, utilizing both quantitative and qualitative data collection tools. Quantitative methods, typically associated with numerical data and statistical analysis, are implemented through structured questionnaires, allowing participants to select responses from predefined options (Creswell, 2018). Conversely, qualitative methods, which focus on narrative and contextual data, are conducted through interviews, enabling a deeper exploration of participants' perspectives and experiences (Yin, 2018). The combination of these approaches provides a comprehensive understanding of the research topic, with questionnaires offering breadth and interviews providing depth (Fetters, 2013). This mixed-methods design aligns with the growing recognition of the complementary nature of quantitative and qualitative research in capturing complex phenomena

(Schoonenboom & Johnson, 2017). The choice of structured questionnaires for the quantitative component facilitates systematic data collection and analysis, while the qualitative interviews allow for the exploration of nuanced insights and contextual factors (Palinkas., 2015). This integrated approach enhances the validity and reliability of the research findings by leveraging the strengths of both methodological paradigms.

4.5 Questionnaire and Interview

There are several types of questionnaires as demonstrated in Figure 4.3. Self-administered questionnaires refer to a prepared questionnaire that is completed by the respondents without any intervention from the researcher. The sub-types include internet-mediated questionnaires, postal questionnaires, and delivery and collection questionnaires. Contrastingly to the self-administrated questionnaire, the researcher intervenes while conducting interviewer-administered questionnaires. For instance, the researcher records the respondent's answers. This can be done through telephone or via a face-to-face meeting with the responder (Saunders, 2011). This research employs self-administrated internet-mediated questionnaires, which can be referred to as web-based or online questionnaires.

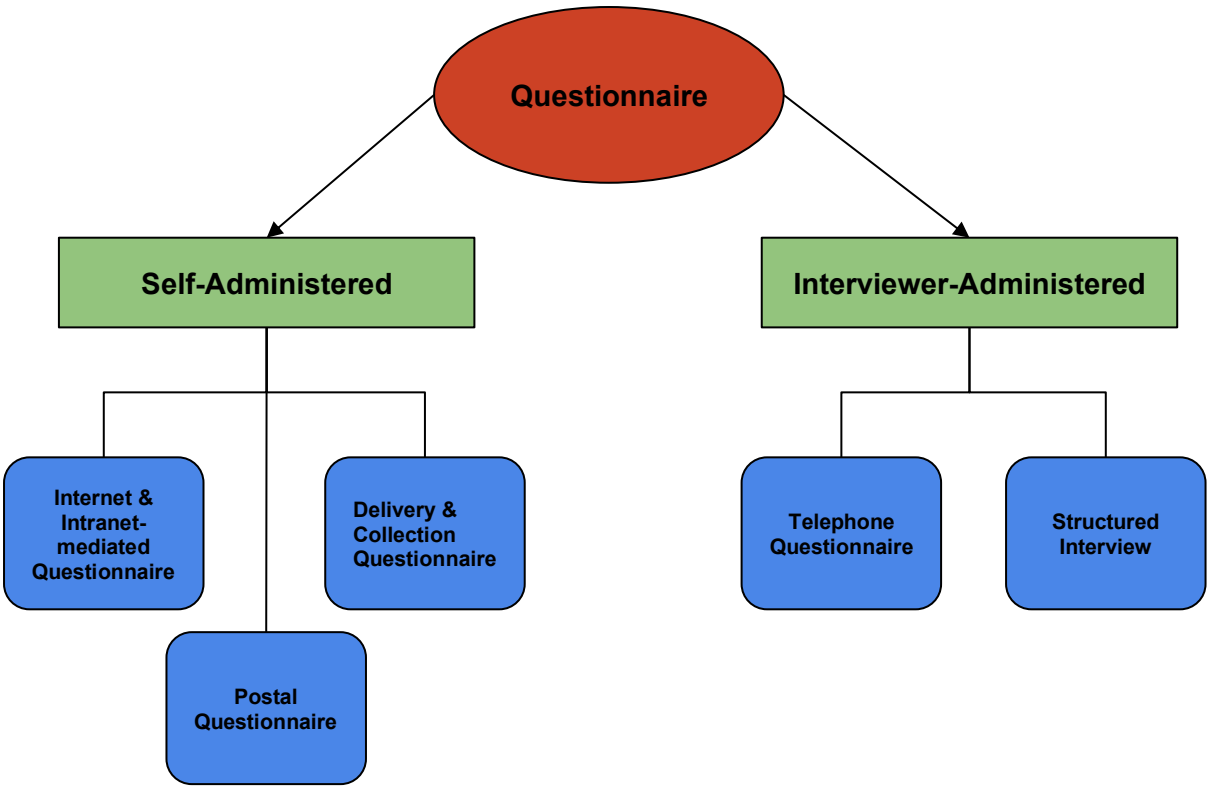


Figure 4.3 Types of Questionnaires (McIntosh & Morse, 2015)

Qualitative interviews have been categorized in a variety of ways, with many contemporary texts loosely differentiating qualitative interviews as: unstructured, semi-structured and structured (Bernard, 2013, Fontana, Frey, Denzin & Lincoln, 2005).

Whereas the unstructured interview is conducted in conjunction with the collection of observational data, semi-structured interviews are often the sole data source for a qualitative research project and are usually scheduled in advance at a designated time and location outside of everyday events (Adams, McIlvain, Lacy, Magsi, Crabtree, Yenny & Sitorius, 2002). They are generally organized around a set of predetermined open-ended questions, with other questions emerging from the dialogue between interviewer and interviewee. Semi-structured in-depth interviews are the most widely used interviewing format for qualitative research and can occur either with an individual or in groups. The individual in-depth interview allows the interviewer to investigate deeply into social and personal matters. Most commonly they are only conducted once for an individual or group and take between 30 minutes to several hours to complete. This research employs semi-structured in-depth interviews in its qualitative phase of study.

4.6 Questionnaire Development and Validation

4.6.1 Quantitative Method

Empirical research methods have gained significant traction in quantitative research methodology, particularly in the fields of social sciences, business management, and health sciences. This approach is valued for its systematic and evidence-based nature, which allows researchers to investigate real-world phenomena through direct or indirect observation and experience (Creswell, 2018). Based on developing hypotheses and testing hypotheses, one can examine and improve the model to explain real world phenomena. The empirical research method consists of using a survey-based questionnaire to collect the data to identify and connect variables present in the problem. It is a comparatively difficult task to design and develop an effective, efficient, and psychometrically perfect questionnaire to be used for research data collection in empirical and clinical research settings.

The final version of the questionnaire was formulated through a sequential series of phases, shown in Table 4.1, with comprehensive insights into each phase presented in the subsequent sections. All questions within the questionnaire were derived from previous studies, as outlined in Table 4.2.

Table 4.1 Questionnaire Development Phases

Phase		Number of Questions
1	Pre-Pilot Test	27
2	Pilot Survey	30
3	Main Survey	30

The final questionnaire administered to residents of the United Arab Emirates (UAE) comprised a total of 29 close-ended questions, followed by a single open-ended question. The questionnaire was structured to capture relevant data for the study. The initial three questions focused on collecting demographic information from the respondents, including gender, age, and educational level. These data were crucial for contextualizing the responses and enabling deeper analysis of the findings. Considering the sensitivity of the research topic in the geopolitical context of the UAE, a 5-point Likert scale was selected for 26 close-ended questions. This approach was informed by the recommendations of Bhattacherjee (2012), who suggested that a larger number of response options can help mitigate the tendency of respondents to select the "neutral" choice, thereby enhancing the quality of the data collected.

The language employed in the questionnaire was deliberately crafted to ensure clarity and ease of comprehension for respondents, aligning with the recommendations of Bhattacherjee (2012). This approach aimed to facilitate a seamless completion process and enhance the quality of the responses garnered. Potential respondents were tasked with selecting the most suitable option based on their individual interpretation of the constructs outlined in the conceptual model. This methodology sought to capture diverse perspectives and insights, enriching the depth and breadth of the data collected for analysis. Emphasizing respondent confidentiality and data protection, the questionnaire abstained from soliciting any information pertaining to the identity of the respondents. Clear assurances were provided, affirming that all data shared would be utilized solely for research purposes and treated with the utmost confidentiality, in adherence to ethical research practices.

During the pilot survey phase, a total of 80 responses were collected, with 58 responses meeting the criteria for completeness. In the subsequent main survey phase, 467 responses were received, of which 315 responses met the completeness standards. Given the diverse age ranges and educational backgrounds of the target population and recognizing Arabic as the predominant language in the UAE, the questionnaire was administered in both Arabic and English.

4.6.2 Structure of the Questionnaire

This research employed a structured questionnaire, providing respondents with a set of predetermined choices to select from. The questionnaire was divided into four distinct sections:

1- Welcome Page

The welcome page introduced the purpose of the questionnaire and clearly articulates the aim and objectives of the research. Additionally, it provided assurances of confidentiality to the potential respondents.

2- Demographic Questions

The second section consists of three multiple-choice questions, capturing demographic variables such as gender, age, and educational level.

3- Close-Ended Questions

The third section contains twenty-six questions utilizing a 5-point Likert scale. These questions were designed to comprehensively address the various constructs of the conceptual model.

4- Open-Ended Question

The final section of the questionnaire includes an open-ended question, allowing respondents to provide additional insights and perspectives beyond the structured response options.

4.6.3 Pre-Test

The initial questionnaire design comprised 25 questions. These questions drew upon existing research, examining similar topics or hypotheses (Burns & Bush, 2002; Fowler, 2002). However, to ensure the instrument's relevance, lack of redundancy, clarity, and ease of comprehension, a pre-test was conducted prior to launching the pilot and main surveys (Burns & Bush, 2002; Fowler, 2002). To achieve these objectives, two academic reviewers (PhD scholars) evaluated the initial questionnaire content. This review resulted in modifications to question wording and grammar for several items. Notably, the final questionnaire contained more questions than the initial version. This increase stemmed from the splitting of some initial questions that contained multiple variables. These multi-variable questions were deemed potentially confusing to respondents and potentially disruptive to the study's objectives. The decision to split questions was further informed by the results of the pilot test.

4.6.4 Pilot Survey

Prior to administering the main survey, a pilot test was conducted to assess the instrument's effectiveness. SurveyMonkey, a widely used online survey platform, was employed to host the questionnaire. The survey link was sent via multiple channels to ensure a diverse reach: email, SMS, and social media applications (WhatsApp, Facebook, and LinkedIn). To optimize participant recruitment within the UAE, we leveraged the targeting algorithms of social media platforms. These algorithms focused on three main geographic areas: Dubai, Abu Dhabi, and Sharjah, which collectively represent over 85% of the UAE's population (as per www.worldometers.info/world-population/united-arab-emirates-population).

The pilot test utilized the final version of the questionnaire, which comprised 30 questions. Each question served to operationalize a specific construct within the study framework. To ensure content validity, each construct was supported by at least four relevant research findings from existing literature. The alignment of questions with hypotheses and their corresponding theoretical underpinnings is further elaborated upon in Table 4.2. This methodological approach strengthens the internal validity of the study by demonstrating that the chosen measures accurately capture the intended constructs.

Table 4.2 Research Questions and Evidence from the Literature

Hypotheses Tested (See Appendix 5)	**Construct**	**Measuring Item (See Appendix 4)**	**Adopted From**
	Demographics	Q1-Q3	
H1a	Technology	Q4-Q7	Alqahtani (2022) dissertation explores information security compliance in e-government, which is crucial for successful digital transformation. It addresses the challenges of maintaining security in digitalized government services, a key concern as governments adopt more advanced technologies
			Seo and Myeong's (2021) study investigate factors influencing the adoption of government as a platform in South Korea, emphasizing the role of intelligent information technology. This aligns with the trend towards whole-of-government approaches in digital transformation, as highlighted in the GovTech initiative
			Guo (2022) examines government responsiveness and public acceptance of big-data technology in urban governance, particularly during the COVID-19 pandemic. This research relates to the use of emerging technologies in public services and citizen engagement, which are core aspects of digital government transformation
			Chatzoglou (2013) focuses on service quality in Citizen's Service Centers in Greece, which, while earlier, is relevant to the ongoing efforts to improve citizen-centric public services through digital means. This study provides a baseline for understanding how digital transformation can enhance service delivery and citizen satisfaction
			Valle-Cruz (2016) investigated citizens' perceptions of how IT use impacts transparency, efficiency, and corruption in local governments. This study directly addresses the relationship between technology adoption and perceived transparency in government operations
			Kim and Shim (2020) explore government communication and public acceptance of policies in South Korea. This research relates to how transparent communication affects citizen trust and policy acceptance, a key aspect of digital government transformation

H2a & H2b	Transparency	Q8-Q11	Yang and Wu (2016) examine socio-technical factors influencing open data publication by government agencies in Taiwan. This study is particularly relevant as open data is a crucial component of government transparency in the digital age
			Porumbescu (2017) investigates whether transparency improves citizens' perceptions of government performance in Seoul, South Korea. This research directly addresses the impact of transparency initiatives on public perception, a critical factor in successful digital government transformation
H3a & H3b	Accountability	Q12-Q13	Janssen (2021) investigates the factors affecting citizens' perceptions of e-government trustworthiness. This study is directly relevant to accountability in digital government transformation, as trustworthiness is a key component of accountability. The research uses interpretive structural modeling to develop a comprehensive theory, which can help policymakers understand the interrelated factors associated with trustworthiness in digital government services
			Gong (2020) focuses on understanding digital transformation in government through the analysis of flexibility and enterprise architecture. While not explicitly about accountability, this study provides insights into the structural changes necessary for digital transformation, which can impact accountability mechanisms in government operations
			Pittaway and Montazemi (2020) examine the know-how required to lead digital transformation in local governments. This research is relevant to accountability as effective leadership in digital transformation can enhance transparency and accountability in government processes
			Malodia (2021) presents an integrated conceptual framework for the future of e-Government. This study likely addresses accountability as part of the broader conceptualization of e-Government development, which often includes transparency and accountability as key objectives of digital transformation
H4a & H4b	Performance	Q14-Q16	Gong (2020) focuses on understanding digital transformation in government through the analysis of flexibility and enterprise architecture. This study is relevant to performance as it examines how organizational structures and adaptability impact the effectiveness of digital transformation efforts
			Mensah (2020) investigates the impact of government capacity and e-government performance on the adoption of e-government services. This research directly addresses how performance metrics influence the success and uptake of digital government initiatives
			Twizeyimana and Andersson (2019) review the public value of e-government, which includes performance aspects such as improved public services and administration. Their work highlights how performance improvements through digital transformation can create tangible benefits for citizens
			Mansoori (2018) examines the adoption of e-government services in Abu Dhabi using a modified UTAUT model. This study relates to performance by investigating factors that influence citizen adoption of digital government services, which is a key performance indicator for digital transformation efforts
H5a & H5b	Digital transformation	Q17-Q20	Mensah (2020) found that e-government performance positively impacts the adoption of e-government services, suggesting a link between digital transformation and citizen satisfaction
			Twizeyimana and Andersson (2019) reviewed the public value of e-government, highlighting how digital transformation can improve public services and administration, thereby enhancing citizen satisfaction
			Janssen (2021) developed a comprehensive theory of trustworthiness in digital government services, emphasizing the importance of trust in successful digital transformation
			Malodia (2021) presented an integrated conceptual framework for the future of e-government, which includes trust and satisfaction as key components influenced by digital transformation
			Li and Xue (2021) investigate factors influencing post-use trust and continuous-use intention of e-government services in Chinese municipalities. This study directly addresses the issue of trust in digital government services and its impact on citizen engagement, which is crucial for successful digital transformation.

H5c	Trust	Q21-Q23	Osman (2011) presented a new framework (COBRAS) to evaluate e-government services from a citizen-centric perspective. While not explicitly focused on trust, this study contributes to understanding citizen perceptions of e-government services, which is fundamental to building trust in digital government initiatives.
			Ward (2016) examines predictors of institutional trust, including trust in government, across six Asia-Pacific countries. Although not specifically about digital government, this study provides insights into factors affecting government trust, which is relevant to digital transformation efforts.
			Mansoor (2021) explores how good governance and quality information provision on social media during the COVID-19 pandemic influenced citizens' trust in government. This study is particularly relevant to digital government transformation, as it examines the role of digital communication channels in building trust during a crisis.
H5d	Satisfaction	Q24-Q29	Chan (2021) provides a comprehensive analysis of the relationship between service design and citizen satisfaction with e-government services. They identify key service perceptions and design characteristics that influence perceived service quality and citizen satisfaction. This study directly addresses the core aspects of citizen satisfaction in digital government transformation
			Malik (2016) evaluates citizen e-satisfaction with e-government services in Pakistan. While specific details are not provided in the search results, this study likely offers insights into factors affecting citizen satisfaction in a developing country context, contributing to the broader understanding of e-government satisfaction across different regions.
			Pedersen (2018) explores the challenges and strategies in e-government transformations. Although not explicitly focused on satisfaction, this study likely addresses how governments can overcome obstacles in digital transformation, which ultimately impacts citizen satisfaction with e-government services.
			Hartanti (2021) focus on measuring citizens' trust in smart government services. Trust is a crucial component of citizen satisfaction, and this study provides insights into how trust can be quantified and potentially improved in the context of digital government initiatives
	Open-Ended Question	Q30	Teo, T. S., Srivastava, S. C., & Jiang, L. I. (2008). Trust and electronic government success: An empirical study. Journal of management information systems.

Following the distribution of the online survey, a total of 80 responses were received. However, after data cleaning procedures, only 58 responses were deemed complete and usable for analysis purposes. The remaining 22 responses were excluded due to incompleteness. This translates to a completion rate of 72%, which falls within the range of acceptable response rates for online surveys (Baruch, 1999; Dommeyer, 2004; Ogier, 2005). The survey length, encompassing 30 questions, could potentially be a contributing factor to the number of incomplete responses.

Data analysis employed the Statistical Package for the Social Sciences (SPSS) version 23.0 to evaluate the conceptual model's validity and reliability. Established research methodology principles (Robinson, 1991a; Sekaran, 2000) informed the selection of minimum and maximum acceptable values for these measures. Cronbach's alpha coefficient was utilized to assess the internal consistency (reliability) of the constructs within the model. Alpha values exceeding 0.7 were considered indicative of good reliability, while values between 0.7 and 0.5 were considered acceptable, and those below 0.5 were deemed poor (Sekaran, 2000). Internal consistency, a facet of validity, was measured using inter-item correlation and item-to-total correlation for each construct. Following Robinson (1991a), inter-item correlations were considered acceptable between 0.3 and 0.8,

while item-to-total correlations were considered acceptable at or above 0.5. In cases where individual items exhibited concerningly low correlations, a decision regarding their retention or deletion was made based on the overall impact on the construct's reliability (number of remaining items) and the proximity of the correlation value to the acceptable threshold (Mahmood & Weerakkody, 2016).

Table 4.3 summarizes the initial reliability and validity analyses conducted on the conceptual model. Constructs 2 (Technology) and 4 (Accountability) exhibited concerns regarding their validity. To address these concerns, Questions 7 and 12 from the main survey were revised. Question 7 was originally lengthy and did not directly target the intended construct. It was redesigned to improve clarity, ensure item-to-item and item-to-total correlations fell within acceptable ranges, and make the question's core concept and the desired response format easily understandable for respondents. This revision aimed to mitigate potential participant confusion, which might have negatively impacted the validity and reliability measures associated with Construct 2. Similarly, Question 12 originally included multiple factors, leading to respondent confusion and negatively affecting item-to-item and item-to-total correlations. Consequently, the question was removed and replaced with a more specific and properly aligned alternative. This revision aimed to improve the correlation values associated with Construct 4.

Table 4.4 presents the results of the reliability and validity assessments following the revisions to Questions 7 and 12. The data demonstrates significant improvement in these measures.

Table 4.3 Summary of reliability and validity analyses (before deleting & modifying questions)

No.	Construct	Question codes (See appendix 3)	Cronbach's Alpha	Item-item correlation (range)	Item-total correlation (range)	Remarks
1	Demographics	Q1-Q3				
2	Technology	Q4-Q7	0.322	-0.517 to 0.690	-0.570 to 0.603	Reliability, inter-item correlation and item-to-total correlation are not good, with Q7 causing serious problems. This item will be replaced as it is contributing to significant error to the reliability, inter item correlation and item to total correlation. Reliability, inter-item correlation and item-to-total correlation are unlikely to change even if the sample size is increased.
3	Transparency	Q8-Q11	0.915	0.584 to 0.816	0.73 to 0.836	Reliability, inter-item correlation and item-to-total correlation are found to be good. All items will be retained for main survey
4	Accountability	Q12-Q13	0.617	-0.342 to 0.604	-0.084 to 0.679	Reliability is poor. Inter-item and item-to-total correlation ranges from poor to good, with item Q12 causing serious problems. This item will be replaced as it is contributing to significant error to the reliability, inter item correlation and item to total correlation. Reliability, inter-item correlation and item-to-total correlation are unlikely to change even if the sample size is increased.

5	Performance	Q14-Q16	0.887	0.558 to 0.771	0.705 to 0.815	Reliability, inter-item correlation and item-to-total correlation are found to be good. All items will be retained for main survey
6	Digital transformation	Q17-Q20	0.744	0.358 to 0.629	0.473 to 0.678	Reliability, inter-item correlation and item-to-total correlation are found to be good. All items will be retained for main survey
7	Trust	Q21-Q23	0.903	0.511 to 0.819	0.659 to 0.838	Reliability, inter-item correlation and item-to-total correlation are found to be good. All items will be retained for main survey
8	Satisfaction	Q24-Q29	0.927	0.429 to 0.835	0.708 to 0.907	Reliability, inter-item correlation and item-to-total correlation are found to be good. All items will be retained for main survey
9	Open End Question	Q30				

After modifications were made to Questions 7 and 12, the data was re-analyzed to confirm the reliability and validity of the instrument. Table 4.4 displays the results of these subsequent tests.

Table 4.4 Summary of Reliability and Validity Analyses (after deleting and modifying Q7 and Q12)

No.	**Construct**	**Question codes (See appendix 3)**	**Cronbach's Alpha**	**Item-item correlation (range)**	**Item-total correlation (range)**	**Remarks**
1	Demographics	Q1-Q3				
2	Technology	Q4-Q7	0.816	0.310 to 0.681	0.520 to 0.740	After modifying Q7, reliability, inter-item and item-to-total correlations are found to be good
3	Transparency	Q8-Q11	0.915	0.584 to 0.816	0.73 to 0.836	Reliability, inter-item correlation and item-to-total correlation are found to be good. All items will be retained for main survey
4	Accountability	Q12-Q13	0.778	0.377 to 0.604	0.499 to 0.645	After deleting Q12, reliability, inter-item and item-to-total correlations are found to be good
5	Performance	Q14-Q16	0.887	0.558 to 0.771	0.705 to 0.815	Reliability, inter-item correlation and item-to-total correlation are found to be good. All items will be retained for main survey
6	Digital transformation	Q17-Q20	0.744	0.358 to 0.629	0.473 to 0.678	Reliability, inter-item correlation and item-to-total correlation are found to be good. All items will be retained for main survey
7	Trust	Q21-Q23	0.903	0.511 to 0.819	0.659 to 0.838	Reliability, inter-item correlation and item-to-total correlation are found to be good. All items will be retained for main survey
8	Satisfaction	Q24-Q29	0.927	0.429 to 0.835	0.708 to 0.907	Reliability, inter-item correlation and item-to-total correlation are found to be good. All items will be retained for main survey
9	Open End Question	Q30				

4.6.5 Main Survey

The main survey instrument consisted of 30 questions (details provided in Table 4.5). Data collection occurred between January 2024 and March 2024. To maximize participation, two reminder prompts were disseminated throughout this period, mirroring the methodology employed in the pilot study.

Table 4.5 Main Survey - Research Questions

Construct	Measuring Items
Demographics	Q1-Q3
Technology	Q4-Q7
Transparency	Q8-Q11
Accountability	Q12-Q13
Performance	Q14-Q16
Digital transformation	Q17-Q20
Trust	Q21-Q23
Satisfaction	Q24-Q29
Open End Question	Q30

The online survey link was estimated to have reached approximately 600 individuals residing within the United Arab Emirates. A total of 315 responses were deemed complete, resulting in a completion rate of 52.5%. This response rate is considered favourable within the field of research science. Furthermore, the sample size of 315 respondents aligns with the criteria for adequacy established by Comrey and Lee (2013) and Tabachnick and Fidell (2003).

4.6.6 Qualitative Method

In qualitative research, a semi-structured interview is a valuable method for exploring the lived experiences and perspectives of participants. This approach strikes a balance between flexibility and focuses on research objectives, allowing for in-depth discussions while ensuring that key topics are addressed. Crafting an effective semi-structured interview guide begins with clearly defining research goals. Researchers should articulate the specific questions their study aims to answer and identify central themes to explore (Kallio, 2016). By formulating these questions, researchers can ensure that interview prompts remain relevant and aligned with the core focus

of the study. The semi-structured format allows for follow-up questions and adaptations during the interview, enhancing the richness of the data collected (Fylan, 2005).

The interview guide acts as a roadmap, outlining the key questions will pose to participants. This guide should consist of open-ended questions that encourage elaboration and rich responses (Kvale & Brinkmann, 2009). However, it is essential to avoid falling into a rigid structure. The ability to adapt questions based on the flow of the conversation and participant responses is crucial (Flick, 2014), incorporating prompts and probes to elicit deeper narratives and steer the conversation towards uncovering nuanced understandings. The interview should have a logical flow that fosters a comfortable and engaging environment. Begin with broad, introductory questions that allow a rapport to build between the interviewer and the participant (Seidman, 2013). Gradually move towards more focused questions that address your pre-identified themes. Conclude the interview by leaving space for final reflections or questions from the participant. This allows for valuable, unforeseen insights to emerge.
This study employed a qualitative approach, utilizing a semi-structured interview guide. The interview questions were developed by drawing upon relevant academic literature on government digital transformation. This process ensured that the questions aligned with the study's constructs and hypotheses (see Table 4.6 for the linkage between questions, constructs, and supporting literature).

The primary objective of the interview guide was to enrich the investigation through the insights of policymakers and operational policy implementers. Their perspectives were crucial to gain a deeper understanding of the causal relationships associated with government digital transformation. Specifically, the interview explored how these stakeholders perceive the impact of digitalization efforts on citizen trust and satisfaction.

Table 4.6 Semi-structured Questionnaire

Hypotheses Tested (See Appendix 5)	**Construct**	**Measuring Item (See Appendix 6)**	**Supporting Literature**
H1a	Technology	Q1	Batubara (2018) focuses on the challenges of adopting blockchain technology for e-government. This study directly addresses how a specific emerging technology impacts digital government transformation, highlighting potential barriers and considerations for implementation.
			Mergel (2019) provides expert insights on defining digital transformation in the government context. While not focusing on a specific technology, this study helps establish a framework for understanding how various technologies contribute to the overall digital transformation process in government.
			Gong (2020) analyzes flexibility and enterprise architecture in government digital transformation. This research examines how organizational and technological factors interact in the digital transformation process, providing

			a comprehensive view of the role of technology in government modernization.
H2a	Transparency	Q2	Tangi (2021) investigates the driving and impeding factors of digital government transformation using structural equation modeling. While not explicitly focused on transparency, this study likely addresses how various factors, including transparency, impact the digital transformation process in government.
			Matheus and Janssen (2020) directly explore the relationship between open government data and transparency. Their systematic literature review introduces the "window theory," which examines how open data initiatives can create a metaphorical window into government operations, enhancing transparency.
			Gil-Garcia (2018) discusses the intersection of digital government and public management research. This study likely touches on transparency as a key aspect of digital government initiatives and their impact on public sector management practices.
H2b	Accountability	Q3	Wang (2018) investigates the role of decision-making and accountability in adaptive governance within the digital government context. This study directly addresses how accountability shapes different types of adaptive governance in digital transformation efforts, highlighting its importance in public-private collaborations for IT-related projects.
			Saldanha (2022) focuses on transparency and accountability in digital public services, using Brazilian cases as examples. While specific details are not provided in the search results, this study likely explores how accountability mechanisms are implemented and affect the delivery of digital government services in Brazil.
			Aminah and Saksono (2021) examine digital transformation in the Indonesian government. Although not explicitly focused on accountability, this case study likely touches on how accountability factors into the broader digital transformation process in Indonesia's public sector.
H2c	Performance	Q4	Gong (2020) analyzes flexibility and enterprise architecture in government digital transformation. This research explores how organizational and technological factors impact the performance of digital government initiatives, providing insights into the relationship between structural elements and transformation outcomes.
			Peng and Tao (2022) investigate how digital transformation promotes enterprise performance from the perspective of public policy and innovation. While focused on enterprises, this study likely offers valuable insights into how digital transformation efforts influence organizational performance, which can be applied to the public sector context.
			Idowu Lamid (2021) presents a framework for assessing digital government transformation performance, specifically tailored for developing countries. This study directly addresses the measurement and evaluation of performance in digital government initiatives, providing a toolkit for assessing transformation outcomes.
H3a & H3b	Digital	Q5,Q6	Chen (2021) investigates the government's role in enhancing digital transformation for small service businesses. This study identifies four key government roles in supporting digital transformation: building digital platforms, providing financial support, offering training programs, and creating a supportive environment. While focused on small businesses, these insights can be applied to broader digital government transformation efforts.
			Gong (2020) provides a comprehensive analysis of digital transformation in government, focusing on flexibility and enterprise architecture. This research explores how organizational and technological factors impact the performance of digital government initiatives, offering insights into the structural elements that influence transformation outcomes

	transformation		Al Shamsi and El-Masri (2017) examine the impact of e-Government implementation on citizens' trust in government, using the United Arab Emirates as a case study. While not explicitly mentioned in the search results, this study likely addresses how digital transformation efforts affect citizen perceptions and trust in government services, which is a crucial aspect of successful digital government transformation.
H4a	Trust	Q7	Mansoor (2021) investigates how good governance and quality information provision on social media during the COVID-19 pandemic influenced citizens' trust in government. This study directly addresses the role of digital communication channels in building trust during a crisis, highlighting the importance of social media in modern government-citizen interactions.
			While Hitlin and Shutava (2022) is not directly mentioned in the search results, it likely explores factors affecting government trust, which is relevant to understanding the impact of digital transformation efforts on citizen perceptions.
			Alessandro (2021) examines the relationship between transparency and trust in government through a survey experiment. This research addresses how increased transparency, often facilitated by digital transformation, affects citizens' trust in government institutions
H4b	Satisfaction	Q8	Chan (2021) provides a multidimensional perspective on service design and citizen satisfaction with e-government services. While specific details are not in the search results, this study likely explores how various aspects of service design in digital government initiatives impact citizen satisfaction.
			Alkraiji (2021) examines citizen satisfaction with mandatory e-government services by comparing two information systems success models. The study found that usefulness has the strongest influence on citizen satisfaction in both models, highlighting the importance of maximizing the benefits of e-government services for citizens
			Chien and Thanh (2022) investigate the impact of good governance on people's satisfaction with public administrative services in Vietnam. Although not explicitly mentioned in the search results, this study likely addresses how governance practices, potentially including digital transformation efforts, affect citizen satisfaction with government services.
Open End Question		Q9	

4.6.7 Semi-Structured Interview

The interview protocol was meticulously crafted to strengthen the theoretical framework underpinning the research hypotheses. This framework was established through a comprehensive literature review (see Table 4.6). The interview aimed to capture not only diverse perspectives on the variables of interest but also the positions and experiences of the individuals providing those perspectives. By drawing upon the extensive literature review, the interview guide was designed to slightly steer respondents towards the key constructs under investigation, without overly restricting their ability to express their full understanding of the subject. This approach ensured the capture of a wide range of knowledge and insights, particularly regarding the policies that the respondents had either created or been part of the team formulating them (Kallio, Pietilä, Johnson & Kangasniemi, 2016).

To further enhance the interview's credibility and structure, two PhD scholars contributed to its formulation. Their involvement enriched the interview guide by incorporating insights from their extensive academic expertise and research experience. This collaborative approach ensured the questions addressed the research objectives comprehensively while also drawing upon valuable perspectives from seasoned scholars in the field.

4.6.8 Interview Participants

This study focused on the United Arab Emirates (UAE) government, specifically targeting individuals holding sensitive positions. To ensure participant anonymity and respect for their privacy, their names were anonymized in the analysis and reporting. Table 4.7 presents the participants' titles and genders, providing context for their perspectives without revealing their identities. While demographic information beyond gender was not collected, it was not deemed essential for understanding the participants' roles, knowledge, and perspectives within the scope of the study.

Due to the sensitive nature of the research involving government officials and limitations on resource availability and time constraints, written responses were obtained instead of audio recordings. Governmental approval is often required for audio recordings in such contexts, which was not feasible for this study.

The interviews were conducted between January and March 2024. Eight interviews were completed, with four conducted in person in Dubai after traveling from Portugal and the remaining four held virtually via Zoom meetings. Table 4.7 summarizes the participants' credentials, government positions, and genders.

The researcher introduced himself as a researcher from the University of Minho conducting a study in the field of Administrative Sciences. The study investigated the relationship between digital government transformation and citizen trust and satisfaction with government services in the UAE. It is relevant to note that the researcher's background includes being born and having worked in Dubai for over five years, providing a strong foundation of knowledge about the country's society and governmental structure.

Table 4.7: Participants' Sample Characteristics

Participants	Gender	Nationality	Working Position
M.M	Male	UAE	Head of Department
V.M	Male	UAE	Assistant Undersecretary
K.M	Male	UAE	Executive Director
IB.M	Female	UK	Executive Director
SH.M	Male	UAE	Head of IT Department
A.M	Female	UAE	Senior Project Manager
L.M	Male	UAE	Senior Project Manager
S.M	Female	UAE	Executive Director

The study employed a purposive sampling strategy to target individuals holding key positions within the UAE government's e-government context. The participants included general managers of government entities, e-government project managers, executive directors, and IT managers. This selection reflects the importance of including various stakeholders who play crucial roles in shaping and implementing digital government initiatives.

According to Papazafeiropoulou (2002), digital government projects possess a long-term impact, influencing not only public and private organisations, but also society as a whole, including citizens. This was accomplished by including a diverse range of stakeholders with firsthand knowledge of e-government projects from leadership, management, and technical perspectives.

4.6.9 Thematic Model

Thematic analysis is the most widely used method for analyzing textual data in contemporary qualitative research. Thematic analysis is known to be accessible to student qualitative researchers, and it tends to produce clear and comprehensible findings that meaningfully make sense of otherwise complex data (Braun, Clarke & Weate, 2016; Tracy, 2024). Indeed, in contrast to analytic methods that comprise a more complete methodology (e.g. phenomenological analysis, Foucauldian discourse analysis or narrative analysis), Thematic analysis can be seen as an intuitive method without deep theoretical commitments (Tracy, 2024). While qualitative research has long relied on some type of thematization during analysis, (Boyatzis, 1998) offered one of the first structured guidelines for conducting thematic analysis and considered it as a potential bridge between qualitative and quantitative research traditions.

Thematic analysis can be an essentialist or realist method on one hand, reporting experiences, meanings and the reality of participants, or it can be a constructionist method on another, examining the ways in which events, realities, meanings, experiences, etc. have on a range of discourses operating within society (Braun & Clarke, 2006). It can also be a contextualist method, with a free-play between essentialism and constructionism, and characterized by theories such as critical realism (Willig, 1999). According to Ryan and Bernard (2003), themes come both from the data (an inductive approach) and from the investigator's prior theoretical understanding of the phenomenon under study (a priori approach).

The present study employs thematic analysis as a complementary structural framework to the conceptual methodology, thereby reinforcing the evidential support for the hypotheses under investigation. Through the collection of semi-structured interviews, each hypothesis is strengthened from a distinct point of view, enhancing the reliability of the findings. This approach is used to gain a comprehensive understanding of the investigated relation between digital transformation and citizens' trust and satisfaction, particularly from the perspective of policymakers. Since there is a lack of substantial literature on this topic, it is appropriate to use an inductive approach for collecting and analyzing data. The qualitative research undertaken in this study serves a specific objective: to establish a solid foundation of literature and empirical evidence that can inform and enrich future discourse on the relationship between digital transformation and citizen engagement, with a keen focus on the pivotal factors of trust and satisfaction.

4.7 Data Analysis

Prior to selecting appropriate data analysis techniques, meticulous data preparation and management are crucial. This includes careful consideration of data type, layout, coding, entry, and error checking (Churchill & Lacobucci, 2004; Saunders, 2011; Sekaran, 2000; Saharan, 2020). In this study, the data originated from two phases, each utilizing distinct data types. The first phase employed a survey instrument, resulting in a combination of nominal responses (categorical data) and interval-level responses (numerical data with meaningful differences between values). Further details regarding the survey instrument can be found in section 4.6.2. The second phase relied on semi-structured interviews, as described in section 4.6.7. This approach yielded qualitative data in the form of open-ended responses. Throughout both phases, data management software facilitated efficient data entry, layout organization, and coding (if applicable). This software also assisted in error checking, ensuring data integrity for subsequent analysis. Additionally, relevant literature served as a guide for data management best practices.

This study utilized IBM SPSS Statistics version 23.0 for data analysis (Field, 2013; George & Mallery, 2016; Pallant, 2013). SPSS provides a comprehensive suite of statistical tools, including descriptive and inferential statistics, as well as advanced modelling capabilities. The software's graphical user interface facilitates data manipulation and management, while its syntax functionality allows for reproducible analyses (George & Mallery, 2016).

Data collected through the online survey platform was exported directly into SPSS format (.sav), preserving variable and value labels. This approach minimized data entry errors and reduced the need for extensive data cleaning procedures. The survey platform's built-in data validation measures further enhanced data quality at the point of collection.

The integration of the online survey system with SPSS streamlined the data analysis workflow, potentially reducing time and resources typically allocated to data preparation tasks. However, it is important to note that while this method offers efficiency advantages, researchers should still conduct thorough data screening to ensure the integrity and appropriateness of the dataset for the intended analyses.

Aligned with the research questions, aim, and objectives, this study adopted Structural Equation Modelling (SEM) as the primary data analysis technique (Gefen, 2000; Hooper, 2008; Schreiber, 2006; Schumacker & Lomax, 2004). SEM offers a robust approach for analyzing the complex, interconnected relationships (structural relationships) between multiple variables. In this research, the concept "Transformation of Government" acts as both a dependent variable (influenced by other variables) and an independent variable (influencing other variables) within the conceptual model. SEM is particularly well-suited for handling such interdependencies within the model. Furthermore, SEM facilitates the assessment of the model's overall fit to the data and enables the testing of the formulated hypotheses through Confirmatory Factor Analysis (CFA) and path analysis (Hair, 2006). AMOS version 23.0, an add-on module for SPSS with a user-friendly graphical interface, was employed to conduct the CFA and path analysis (Arbuckle & Wothke, 1999; Blunch, 2012; Byrne, 2016). This software choice streamlined the data analysis process.

On the other hand, the data collected from the semi-structured interviews were analyzed using thematic analysis. The findings of the qualitative analysis contribute to the theory presented and address the highlighted research questions of this study. Chapter 5 will delve deeper into the specific details of the data analysis procedures employed in this research.

4.8 Chapter Summary

This chapter outlines the methodological framework and specific research techniques employed in this study. The rationale for adopting a positivist philosophical paradigm, as opposed to interpretive or critical approaches, is first presented. This aligns with the research's explanatory purpose, which seeks to identify causal relationships between variables. The research process is then delineated, outlining the various phases involved. The chapter subsequently delves into the chosen research methodology. The justification for utilizing a mixed-method approach, incorporating both quantitative and qualitative data collection strategies, is discussed. The selection of online surveys for citizen data and semi-structured interviews for policymakers' perspectives is then explained, highlighting the rationale behind each approach. The sampling process is then meticulously described, detailing the target population, sampling frame, specific sampling technique employed, and the determined sample size. Additionally, the chapter elaborates on the development and validation of the questionnaire instrument used in the online survey. This includes a discussion of the structure and elements of the questionnaire, as well as the pre-testing, pilot testing, and main survey phases.

Finally, the chapter concludes by providing justifications for the selection of Structural Equation Modelling (SEM) and Analysis of Moment Structures (AMOS) software for data analysis. The subsequent chapter will delve into the data analysis process itself, presenting the findings from Confirmatory Factor Analysis (CFA), path analysis, and thematic analysis.

Chapter 5: Data Analysis

5.1 Introduction

In Chapter 4, a comprehensive exploration of the research framework was undertaken, encompassing fundamental components such as research philosophy, the research process, methodology selection, and intricate mechanisms for data collection. A mixed-method research approach was employed, integrating the distribution of an online survey to a representative sample of citizens across the United Arab Emirates and the implementation of semi-structured interviews conducted with policy makers operating within the government of Dubai. This methodology aimed to investigate the profound impact of governmental transformation on the levels of trust and satisfaction among citizens. Furthermore, the chapter presents the various tests conducted on the collected data, shedding light on the review and interpretation of findings rooted in empirical evidence gathered through the research process.

Drawing upon the detailed research methodology explained in Chapter 4, Structural Equation Modelling (SEM) was judiciously selected as a sophisticated multivariate analysis technique to assess the adequacy of the conceptual framework. Preceding the application of Confirmatory Factor Analysis (CFA) and path analysis, a rigorous series of data refinement procedures were executed. These encompassed an array of essential tests aimed at enhancing data quality and integrity, notably including the execution of Exploratory Factor Analysis (EFA) to uncover latent constructs, meticulous evaluation of the research instrument's reliability and validity metrics, investigation of inter-variable correlations, and assessment of the data's conformance to normal distribution assumptions. Through these meticulous data preparation steps, the research strives to engender robustness and rigor in the subsequent analytical phases, underpinning the validity and trustworthiness of the research outcomes.

This chapter follows a systematically structured, four-part framework to comprehensively analyze the research findings. Part, one serves as an introduction, providing essential background information about the chapter strategies. Part two dives deep into quantitative data analysis, with dedicated sections for response rate and sampling, profiles of the respondents, factor analysis, reliability and validity analysis, descriptive statistics, correlation matrix, data normality, structural equation modelling, confirmatory factor analysis and finally the path analysis. Part three then presents qualitative analysis, offering a complementary perspective. Mirroring part two, it is further divided into subsections that rigorously validate and analyze data collected through the semi structured interview by exploring themes, patterns, and codes identified within the data. Finally, part four culminates in a

comprehensive conclusion that synthesizes the key findings from both quantitative and qualitative analyses, drawing connections and highlighting the overall contribution of the research to the existing knowledge base.

5.2 Quantitative Analysis

5.2.1 Response Rate and Sampling Size

This research employed an online survey methodology comprising 30 questions, which was conducted from January 2024 to March 2024 via email, SMS, and various social media platforms to engage residents of the United Arab Emirates. Out of a total response pool of 467, a rigorous curation process identified 315 complete and viable questionnaire responses for the research investigation. Consequently, 152 responses with missing data were excluded based on the guidance provided by Pigott (2001). This refinement resulted in a dataset of 315 responses, which exhibited improved normality test results and coherence within the correlation matrix, enhancing the model fit and reinforcing the validity of the outcomes.

By leveraging an extensive network of contacts within the United Arab Emirates, the incorporation of a collaborative dataset from a partner organization expanded the survey's reach to an estimated 600 individuals. The resulting response rate of 52.5% is considered robust within the domain of administrative research, in line with Fowler's (2002) guidelines. Consistent with the principles articulated by Comrey and Lee (1992) and Tabachnick and Fidell (2001), the sample size of 315 responses is deemed methodologically sound and conducive to achieving the research objectives.

5.2.2 Profile of the Respondents

The online survey was carefully designed to include questions about demographics, including gender, age, and education levels. The detailed profiles of the survey participants are shown visually in Table 5.1. A close look at the data in the table shows that there is no clear bias based on gender or age, indicating that a diverse group of participants representative of the target population took part. When we look at the education levels of the participants, we see that a large proportion of them have a high level of education. This shows that the survey appealed to a wide audience interested in meaningful discussions and informed viewpoints, confirming that the research could gather detailed insights from a knowledgeable and perceptive group of participants.

Table 5.1 Participants Profile

Gender	Frequency (%)	Age	Frequency (%)	Education	Frequency (%)
Male	34.25%	Before 1960	2.00%	Less than high school	6.94%
Female	63.01%	1960-1979	36.00%	High school diploma or equivalent	9.72%
Others	2.74%	1980-1999	41.00%	Some college, no degree	2.78%
		2000-2006	21.00%	Associate or bachelor's degree	38.89%
				Graduate or professional degree	41.67%
Total 315					

5.2.3 Factor Analysis

Factor analysis is a powerful statistical technique that serves two primary purposes in academic research: verifying construct validity and explaining the correlation between variables. This multivariate method can be conducted using two distinct approaches: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

Exploratory Factor Analysis (EFA)

EFA is a data-driven approach that aims to identify the underlying factor structure of a set of variables. By examining the patterns of correlation among the variables, EFA can group them into meaningful factors or latent constructs (Henson & Roberts, 2006; Thompson, 2004; Williams, 2010). This process is particularly useful in the early stages of research, as it can help researchers uncover potential problems with the variables and prepare them for a more rigorous Structural Equation Modelling (SEM) phase (Cabrera-Nguyen, 2010; Worthington & Whittaker, 2006).

Confirmatory Factor Analysis (CFA)

In contrast to the exploratory nature of EFA, CFA is a theory-driven approach that allows researchers to test the hypothesized factor structure of a set of variables. By specifying the relationships between the observed variables and the underlying latent factors, CFA provides a statistical test of the proposed model's fit to the data (Henson

& Roberts, 2006; Thompson, 2004; Williams, 2010). This method is particularly useful for validating the construct validity of a measurement instrument or for refining an existing theoretical model.

The Complementary Roles of EFA and CFA

The existing literature suggests that the combined use of EFA and CFA can be a powerful approach to construct validation and variable relationships (Cabrera-Nguyen, 2010; Worthington & Whittaker, 2006). EFA can be employed early in the research process to identify potential issues with the variables and uncover the underlying factor structure. This information can then be used to inform the development of a more refined and theoretically grounded model, which can be tested using CFA. By leveraging the strengths of both approaches, researchers can gain a comprehensive understanding of the construct validity and the relationships among the variables under investigation.

5.2.4 Reliability and Validity Analysis

The cornerstone of robust quantitative research lies in the careful evaluation of the research instrument's measurement quality (Sekaran, 2003). To establish confidence in the findings of phase one, which relies on a quantitative method, this study employs reliability and validity testing procedures (Churchill & Lacobucci, 2004). Reliability refers to the consistency of scores obtained from the research instrument over multiple administrations (Hair, 2019). Validity, on the other hand, ensures the instrument measures the intended constructs accurately (Sürücü & Maslakci, 2020; Ahmed & Ishtiaq, 2021).

Minimum and maximum acceptable values for both reliability and validity are established and reported in Table 5.2 (Please refer to the benchmarks and criteria mentioned in chapter 4). By adhering to these benchmarks, the research aims to minimize measurement error and ensure the collected data accurately reflects the underlying constructs of interest. This, in turn, strengthens the overall credibility and generalizability of the research findings (Sekaran, 2003).

Table 5.2 Values for Reliability and Validity Assessment

Measuring Tool		**Recommended Value**	**References**
Reliability	Cronbach's alpha	Value= 0.7: Acceptable Value> 0.7: Good Value< 0.7: Poor	(Sekaran,2003)
Validity	Inter-item correlation	Minimum = 0.3 Maximum = 0.8	(Robinson,1991a)
	Item to total correlation	Maximum = 0.5	

Table 5.3 presents the results of the reliability and validity analyses conducted on the 30-item research instrument. These analyses are crucial for establishing confidence in the instrument's ability to accurately measure the intended constructs (Churchill & Iacobucci, 2004) The results indicate that Cronbach's Alpha coefficient exceeds 0.7. This value falls within the generally accepted range for acceptable internal consistency reliability in social science research (Tavakol & Dennick, 2011). A high Cronbach's Alpha suggests the items within the instrument measure a single underlying construct consistently (Hair, 2019).

Table 5.3 Reliability and Validity Assessment

No.	Construct	Question codes (See appendix 3)	No. of Items	Responses	Cronbach's Alpha	Item-item correlation (range)	Item-total correlation (range)	Remarks
1	Demographics	Q1-Q3	3	315				
2	Technology	Q4-Q7	4	315	0.816	0.310 to 0.681	0.520 to 0.740	Reliability, inter item correlation and item to total correlation are good
3	Transparency	Q8-Q11	4	315	0.915	0.584 to 0.816	0.73 to 0.836	Reliability, inter item correlation and item to total correlation are good
4	Accountability	Q12-Q13	2	315	0.778	0.377 to 0.604	0.499 to 0.645	Reliability, inter item correlation and item to total correlation are good
5	Performance	Q14-Q16	3	315	0.887	0.558 to 0.771	0.705 to 0.815	Reliability, inter item correlation and item to total correlation are good
6	Digital transformation	Q17-Q20	4	315	0.744	0.358 to 0.629	0.473 to 0.678	Reliability, inter item correlation and item to total correlation are good
7	Trust	Q21-Q23	3	315	0.903	0.511 to 0.819	0.659 to 0.838	Reliability, inter item correlation and item to total correlation are good
8	Satisfaction	Q24-Q29	6	315	0.927	0.429 to 0.835	0.708 to 0.907	Reliability, inter item correlation and item to total correlation are good
9	Open End Question	Q30	1	315				

5.2.5 Descriptive Statistics

Table 5.4 presents the descriptive statistics for the 30 research instrument items, categorized according to the seven constructs they represent. The table includes the mean and standard deviation for each item. These descriptive statistics provide a preliminary understanding of the central tendencies and variability within the data (Field, 2013). Furthermore, each item is assigned a unique code that links it to its corresponding construct. This coding scheme serves several important functions. First, it facilitates data organization and management, ensuring clarity and traceability throughout the analysis process (Miles & Huberman, 1994). Second, the coding system allows for efficient data manipulation and statistical analysis using software packages (Hair, 2019). For

instance, the codes can be used to filter data by construct or compute construct-level scores. Overall, the coding scheme contributes to the research's rigor and replicability (Yin, 2018).

Table 5.4 Descriptive Statistics

Construct	Item	Code	Responses	Mean	Std. Deviation
Demographics	Q1	Demographic 1	315	2.82	0.78
	Q2	Demographic 2	315	1.68	0.5
	Q3	Demographic 3	315	4.02	1.23
Technology	Q4	Technology1	315	3.31	1.15
	Q5	Technology2	315	2.52	1.28
	Q6	Technology3	315	3.40	1.14
	Q7	Technology4	315	3.24	1.17
Transparency	Q8	Transparency1	315	4.81	1.43
	Q9	Transparency2	315	3.08	1.24
	Q10	Transparency3	315	3.74	1.03
	Q11	Transparency4	315	2.87	1.23
Accountability	Q12	Accountability1	315	2.86	1.24
	Q13	Accountability2	315	3.05	1.18
Performance	Q14	Performance1	315	3.14	1.20
	Q15	Performance2	315	3.33	1.28
	Q16	Performance3	315	2.92	1.30
Digital transformation	Q17	Digital transformation1	315	2.78	1.29
	Q18	Digital transformation2	315	3.30	1.14
	Q19	Digital	315	3.03	1.25

		transformation3			
	Q20	Digital transformation4	315	2.64	1.32
Trust	Q21	Trust1	315	3.10	1.23
	Q22	Trust2	315	3.06	1.27
	Q23	Trust3	315	3.21	1.18
Satisfaction	Q24	Satisfaction1	315	3.31	1.15
	Q25	Satisfaction2	315	2.98	1.28
	Q26	Satisfaction3	315	3.21	1.18
	Q27	Satisfaction4	315	2.87	1.29
	Q28	Satisfaction5	315	3.00	1.22
	Q29	Satisfaction6	315	3.31	1.15
Open End Question	Q30	Open End Question	315		

The analysis of the survey responses reveals a range of mean scores from 2.52 to 4.81 across the items (where 1 represents the minimum and 5 the maximum possible score). This range suggests that, on average, respondents tend to rate their experiences between "neither disagree nor agree" and "agree" on the Likert scale. The descriptive statistics indicate a generally positive opinion regarding government service provision, as most items show mean scores exceeding 3.0. Similarly, the mean scores related to trust in government initiatives also surpass the midpoint of 3.0 on the scale. These results provide an initial overview of respondents' perceptions, showing a tendency towards positive evaluations. However, it's important to note that these descriptive statistics alone do not allow for conclusions about relationships between variables or support for hypotheses. Further statistical analyses, such as correlation or regression analyses, would be necessary to examine any potential relationships between technology, digital government transformation, and factors like performance, transparency, and accountability.

5.2.6 Correlation Matrix

This study employed a correlation matrix to quantify the linear relationships between the research variables. Table 5.5 presents the correlation matrix, along with the mean and standard deviation for each variable. As evident from Table 5.5, the variables exhibit statistically significant correlations (Bartko, 1966; Lee Rodgers & Nicewander, 1988; Taylor, 1990). The strength of these associations' ranges from 0.566 to 0.860, indicating moderate to strong positive relationships.

Table 5.5 Mean, Std. Deviation and Correlation

	Mean	Std. Deviation	Technology	Transparency	Accountability	Performance	Digital transformation	Trust
Technology	12.47	4.74						
Transparency	14.5	4.93	.743**					
Accountability	5.91	2.42	.566**	.678**				
Performance	9.39	3.78	.707**	.698**	.691**			
Digital transformation	11.75	5.00	.722**	.691**	.689**	667**		
Trust	9.37	3.68	.646**	.699**	.758**	.672**	.553**	
Satisfaction	18.68	7.27	.786**	.761**	.794**	748**	.602**	.860**

*Note: * p<0.05, ** p<0.01, *** p<0.001*

5.2.7 Normality of the Data

An assessment of data normality was conducted to ensure the validity of subsequent statistical procedures. This involved examining skewness and kurtosis (Hair, 2006). Skewness refers to the asymmetry of a distribution, indicating whether the data is skewed left or right (Pallant, 2010). Kurtosis reflects the degree to which the tails of a distribution are heavier or lighter compared to a normal distribution. A platykurtic distribution exhibits lighter tails, while a leptokurtic distribution has heavier tails (Field, 2013). The specific criteria for interpreting skewness and kurtosis values are presented in Table 5.6.

Table 5.6 Parameters for Skewness and Kurtosis

	Positive Form	**Negative Form**	**Acceptable Range**	**References**
Skewness	Distribution is shifted to the left	Distribution is shifted to the right	+1.5 to -1.5	Li (1999); Pallant (2010)
Kurtosis	Flat distribution of data	Peaked distribution of data	+3 to -3	Li (1999); Pallant (2010)

An assessment of data normality was conducted to ensure the validity of subsequent statistical procedures. This involved examining the skewness and kurtosis of the data, as presented in Table 5.7. The absolute values of all skewness statistics fall within the range of ±1.5, and none of the kurtosis values exceeds ±3.0. These findings suggest that the data distribution can be considered approximately normal.

Table 5.7 Results of Skewness and Kurtosis Test

Construct	Question codes	Response Number	Mean	Std. Deviation	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Demographics	Q1 to Q3	315						
Technology	Q4 to Q7	315	12.47	4.74	-.051	.127	-.567	.237
Transparency	Q8 to Q11	315	14.5	4.93	.188	.127	-.282	.237
Accountability	Q12 to Q13	315	5.91	2.42	-.035	.127	-.416	.237
Performance	Q14 to Q16	315	9.39	3.78	-.042	.127	-.318	.237
Digital transformation	Q17 to Q20	315	11.75	5.00	.058	.127	-.258	.237
Trust	Q21 to Q23	315	9.37	3.68	.149	.127	-.543	.237
Satisfaction	Q24 to Q29	315	18.68	7.27	-.118	.127	-.475	.237
Open End Question	Q30	315						

5.2.8 Confirmatory Factor Analysis

5.2.8.1 Measurement Model Fit

Confirmatory Factor Analysis (CFA) was employed using AMOS software to assess the adequacy of the hypothesized measurement model. It is essential to acknowledge the multifaceted nature of model fit evaluation before delving into the CFA results (Schreiber, 2006). Numerous fit indices exist, including Chi-square (χ^2), Goodness-of-Fit Index (GFI), Degrees of Freedom (DF), Comparative Fit Index (CFI), Normed Fit Index (NFI), Incremental Fit Index (IFI), Relative Fit Index (RFI), Tucker-Lewis Index (TLI), Root Mean Square Residual (RMR), and Root Mean Square Error of Approximation (RMSEA) (Hair, 2009). However, the field currently lacks a universally accepted set of fit indices for mandatory reporting (Jackson, 2009). Similarly, there is no single standard for acceptable fit index values (Hair, 2009; Schreiber, 2006). While Park (2008) suggests reporting at least one fit index, researchers often employ a combination of absolute, relative, and parsimony-adjusted fit

indices to provide a more comprehensive picture of model fit (Hu & Bentler, 1999). This multifaceted approach acknowledges the limitations of any single metric and strengthens the overall evaluation of the measurement model.

The research reports on seven fit indices, detailed in Table 5.8. The selection of these indices reflects the established practice of employing a combination of absolute, relative, and parsimony-adjusted measures to provide a comprehensive assessment of model fit (Hu & Bentler, 1999). This approach acknowledges the limitations inherent in any single metric and strengthens the overall evaluation of the measurement model (Kline, 2011). While not a universally accepted standard, reporting multiple fit indices aligns with recommendations from prior research (Hooper, 2008; Iacobucci, 2010).

Table 5.8 Recommended Levels for Fit Indices

Fit indices	Recommended Value	References
Chi-square test statistic CMIN/ df	1.00~3.00	Lee (2015)
Goodness-of fit index (GFI)	>0.80	Lee (2015)
Root Mean square error of app. (RMSEA)	<0.08	Lee (2015)
Root mean squared residual (RMR)	<0.05	Lee (2015)
Tucker-Lewis Index (TLI)	>0.90	Hu and Bentler, (1998;1999)
Comparative Fit Index (CFI)	>0.90	Hu and Bentler, (1998;1999)
Incremental Fit Index (IFI)	>0.90	Hu and Bentler, (1998;1999)

The Confirmatory Factor Analysis (CFA) yielded fit indices presented in Table 5.9. These indices included Chi-Square per Degree of Freedom (CMIN/DF), Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and Incremental Fit Index (IFI). Overall, the fit indices suggest an acceptable fit of the hypothesized measurement model, aligning with recommendations by Hu & Bentler (1999). Notably, CMIN/DF, RMSEA, TLI, CFI, and IFI values all fall within commonly accepted ranges for good model fit. However, a closer look reveals some nuances. The Goodness-of-Fit Index (GFI) at 0.775 is slightly lower than the recommended value of 0.8. While this deviation is minor, it warrants consideration. Additionally, the Root Mean Square Residual (RMR) value of 0.113 exceeded the recommended benchmark of 0.05. It's important to remember that exceeding a single fit index value doesn't necessarily negate the overall model fit, but it does suggest areas for potential improvement (Cheung & Lau, 2008).

In conclusion, five out of the seven proposed fit indices achieved acceptable levels, and one (GFI) was very close. While these results suggest a generally good fit for the CFA model, the deviations in GFI and RMR warrant further exploration to potentially refine the model and achieve an even stronger fit.

Table 5.9 Values for Fit Indices

Fit indices	Recommended Value	Structural Model
Chi-square test statistic CMIN/ df	1.00~3.00	1997.084/991=2.015
Goodness-of fit index (GFI)	>0.80	0.775
Root Mean square error of app. (RMSEA)	<0.08	0.057
Root mean squared residual (RMR)	<0.05	0.113
Tucker-Lewis Index (TLI)	>0.90	0.921
Comparative Fit Index (CFI)	>0.90	0.921
Incremental Fit Index (IFI)	>0.90	0.921

5.2.8.2 Standardized Loadings, Critical Ratios and R Squares

The following section presents the standardized factor loadings, Critical Ratios (CR), and R Square (Squared Multiple Correlations, SMC) for all items included in the measurement model. These metrics provide valuable insights into the overall fit of the model and the significance of individual items (Hair, 2010). Table 5.10 summarizes the acceptable values typically used for interpreting these indices.

Table 5.10 Recommended Values for Standardized Loadings, C.R, SMC

Parameters	Recommended Value	References
Standardized loadings	>0.5	Hair (2010)
Critical Ratios (C.R.)	> ± 1.96 (p < 0.001)	Hox and Bechger (1998)
R square (SMC)	<=0.9	Field (2006) and Tabchnick and Fidell (2006)

The CFA results, presented in Table 5.11, reveal favourable standardized loadings, critical ratios (C.R.), and an acceptable overall model fit as measured by R-squared (SMC). Examining the standardized loadings (Standardized Regression Weights, S.R.W), all values exceed 0.5, indicating strong relationships between the items and their respective latent variables (Hair, 2010). This suggests good convergent validity, as the items effectively capture the underlying constructs they are designed to measure.

Furthermore, the C.R. values are all above ±1.96 ($p < 0.001$), signifying that the relationships between the items and their latent variables are statistically significant at the 0.001 level. This reinforces the notion that the items contribute meaningfully to the measurement model. Finally, while the R-squared (SMC) values for each factor are all below 0.9, it's important to consider that this index reflects the proportion of variance in the items explained by the model.

In the context of structural equation modelling, achieving an R-squared of 1.0 is generally unrealistic, and values above 0.8 are considered acceptable for well-fitting models (Hu & Bentler, 1999). Therefore, the SMC values in this study suggest a good overall fit of the measurement model.

Table 5.11 Values for Standardized Loadings, C.R, SMC

Structural Relation		**R.W.**	**S.E.**	**C.R.**	**S.R.W**	**SMC**
Technology1	cTechnology	1.122	0.082	13.68	0.708	0.501
Technology2	cTechnology	1.011	0.078	13.026	0.681	0.464
Technology3	cTechnology	1.249	0.079	15.884	0.79	0.624
Technology4	cTechnology	1.156	0.077	14.999	0.742	0.551
Transparency1	cTransparency	1.134	0.07	16.254	0.79	0.625
Transparency2	cTransparency	1.09	0.074	14.648	0.735	0.54
Transparency3	cTransparency	1.253	0.079	15.779	0.774	0.6
Transparency4	cTransparency	1.034	0.071	14.662	0.735	0.54
Accountability1	cAccountability	1.204	0.071	17.035	0.811	0.657
Accountability2	cAccountability	1.253	0.075	16.819	0.804	0.646
Performance1	cPerformance	1.263	0.071	17.761	0.83	0.688
Performance2	cPerformance	1.294	0.071	18.345	0.847	0.717
Performance3	cPerformance	1.166	0.071	16.359	0.786	0.617
Digital transformation1	cDigital transformation	0.927	0.083	11.199	0.598	0.357
Digital transformation2	cDigital transformation	1.294	0.07	18.455	0.853	0.728

Digital transformation3	Digital transformation	1.197	0.071	16.768	0.808	0.653
Digital transformation4	cDigital transformation	1.166	0.072	16.115	0.781	0.609
Trust1	cTrust	1.22	0.073	16.619	0.792	0.627
Trust2	cTrust	1.263	0.071	17.901	0.832	0.692
Trust3	cTrust	1.452	0.071	20.557	0.905	0.819
Satisfaction1	cSatisfaction	1.341	0.069	19.55	0.878	0.771
Satisfaction2	cSatisfaction	1.318	0.068	19.335	0.872	0.761
Satisfaction3	cSatisfaction	1.278	0.069	18.543	0.85	0.723
Satisfaction4	cSatisfaction	1.186	0.07	17.007	0.804	0.646
Satisfaction5	cSatisfaction	1.294	0.067	19.389	0.874	0.764
Satisfaction6	cSatisfaction	1.436	0.073	19.748	0.884	0.781

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.

5.2.8.3 Construct Validity Assessment

Construct validity refers to the degree to which a measure accurately captures the underlying construct it is intended to represent (Brown, 1996; Hair, 2010; Zikmund, 2003). In this research, convergent validity is employed to assess construct validity (Hair, 2010). Convergent validity focuses on the extent to which multiple measures of the same construct converge and reflect a shared core meaning (Bagozzi & Yi, 2012). In simpler terms, it examines whether different indicators of the same construct point in the same direction. There are several methods to assess convergent validity, and this study utilizes standardized loadings, Average Variance Extracted (AVE), and Composite Reliability (CR).

Standardized loadings, discussed in Section 5.10.2, represent the correlation between an indicator and its underlying latent construct. Acceptable values for standardized loadings typically exceed 0.5, indicating a strong relationship between the indicator and the construct it is designed to measure (Hair, 2010). Furthermore, AVE reflects the average amount of variance in an indicator that is explained by its underlying construct. Ideally, AVE values should be greater than 0.5, suggesting that a majority of the variance in the indicator is captured by the construct (Fornell & Larcker, 1981). Finally, Composite Reliability (CR) is an indicator of internal consistency within a set of measures for a construct. Acceptable CR values typically range above 0.7, signifying that the

indicators are measuring the construct reliably (Hair, 2010). Table 5.12 summarizes the recommended thresholds for AVE and CR used in this study.

Table 5.12 Recommended Values for AVE and CR

Parameters	Recommended Value	References
Average Variance Extracted (AVE)	>= 0.5	Fornell and Larcker (1981); Hair (2010)
Composite Reliability (CR)	>= 0.7	Nunnally and Bernstein (1994)

To ensure the accuracy and reliability of the convergent validity assessment, the CR (Critical Ratio) and AVE (Average Variance Extracted) values were calculated using multiple software tools and online calculators. This cross-validation approach helps mitigate potential errors associated with any single software program (Chin, 1998). As presented in Table 5.13, all CR and AVE values obtained from these different sources were consistent, demonstrating the robustness of the results. Furthermore, the CR values all exceeded 0.7, and the AVE values were consistently above 0.5. These values surpass the commonly recommended thresholds for acceptable convergent validity (Hair, 2010; Fornell & Larcker, 1981). This suggests that the indicators within each construct share a strong conceptual foundation and effectively capture the underlying latent variables they represent. Consequently, the findings provide strong evidence for the convergent validity of the measurement model.

Table 5.13 AVE and CR Values of the Measurement Model

	CR	AVE	cSatisfaction	cDigital transformation	cTransparency	cAccountability	cTechnology	cPerformance	cTrust
cSatisfaction	0.932	0.733	0.856						
cDigital transformation	0.897	0.594	0.756	0.771					
cTransparency	0.844	0.576	0.754	0.83	0.759				
cAccountability	0.862	0.61	0.738	0.796	0.899	0.781			
cTechnology	0.771	0.53	0.782	0.769	0.887	0.966	0.728		
cPerformance	0.899	0.691	0.948	0.783	0.791	0.775	0.796	0.821	
cTrust	0.936	0.745	0.791	0.674	0.75	0.785	0.771	0.85	0.863

5.2.9 Structural Equation Modelling

This research employs Structural Equation Modelling (SEM) as the primary multivariate statistical analysis technique for the quantitative phase of data collected. SEM offers a comprehensive framework that combines the

strengths of Exploratory Factor Analysis (EFA) and multiple regression (Hair, 2006). It facilitates the examination of complex structural relationships between the variables of interest. This is achieved through the application of two interrelated models: the measurement model and the structural model (Suhr, 2006).

The measurement model focuses on establishing the underlying latent variables that are not directly observable but are inferred from the observed (measured) variables. It assesses the validity and reliability of the measurement instrument used to capture these latent constructs. The structural model, on the other hand, investigates the hypothesized relationships between the latent variables themselves. This allows for the estimation of direct and indirect effects, providing a deeper understanding of the underlying causal structure within the data.

5.2.10 Path Analysis

Path analysis, a core technique within Structural Equation Modelling (SEM), is employed to test the hypothesized relationships depicted in the conceptual model (Hair, 2010). As outlined in previous chapters, the conceptual model for this research comprises seven variables and eleven specific hypotheses. The results of the path analysis, conducted using AMOS software, are presented in Table 5.14 and Figure 5.1.

Table 5.14 Path Analysis Results

Hypotheses	Path	Standardized Coefficient (t)P	Results
H1a	Technology→Digital transformation	0.694(57.8333333)***	Supported
H2a	Transparency→Digital transformation	0.154(12.8333333)***	Supported
H2b	Digital transformation→Transparency	0.1642(16.8333333)***	Supported
H3a	Accountability→Digital transformation	0.605(50.4166667)***	Supported
H3b	Digital transformation→Accountability	0.809(72.4166667)***	Supported
H4a	Performance→Digital transformation	0.957(78.75)***	Supported
H4b	Digital transformation→Performance	0.996(79.93)***	Supported
H5a	Digital transformation→Satisfaction	0.996(19.92)***	Supported
H5b	Digital transformation→Trust	0.978(22.81)***	Supported
H5c	Trust→Satisfaction	0.959(78.0659242)***	Supported
H5d	Satisfaction→Trust	0.963(74.0769231)***	Supported

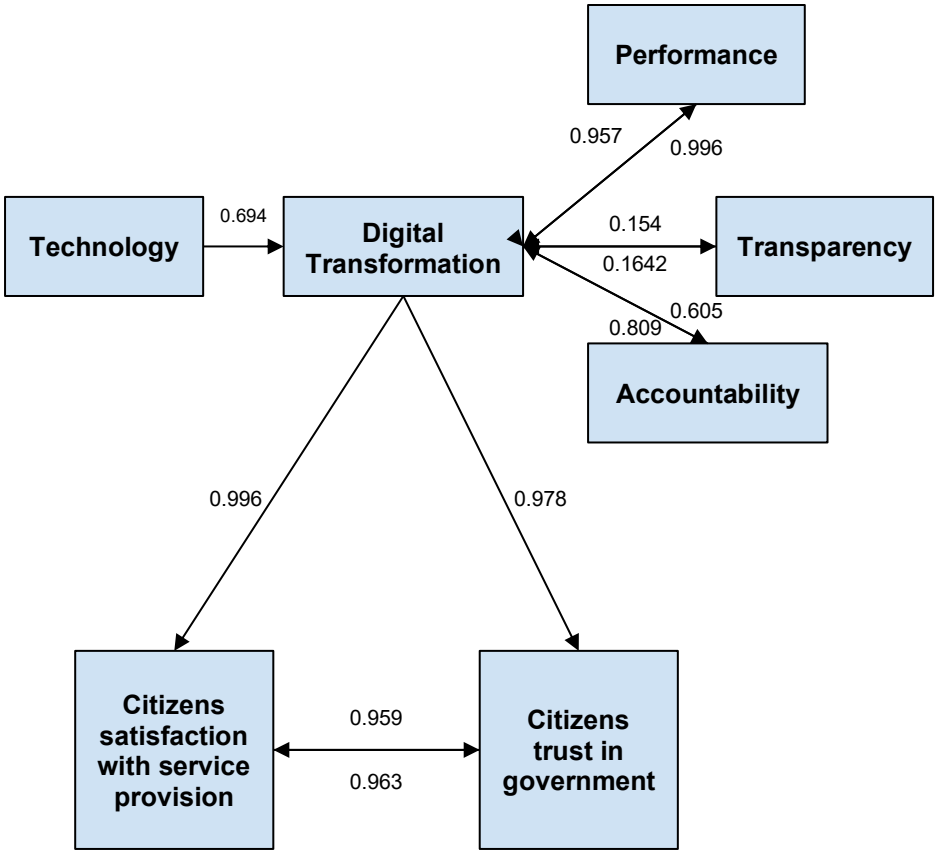


Figure 5.1 Path Analysis Results

Table 5.14 presents the findings from the path analysis, shedding light on the hypothesized relationships outlined in the conceptual model. As expected, all eleven research hypotheses found empirical validation. The results indicate a substantial positive impact of Technology on Digital Transformation, with coefficients of (\beta = 0.694), (t = 57.833), and (p < 0.001), which supports Hypothesis (H1a). Additionally, Transparency demonstrated a positive correlation with Digital Transformation, showing coefficients of (\beta = 0.154), (t = 12.833), and (p < 0.001) for Hypothesis (H2a), while (\beta = 0.1642), (t = 16.833), and (p < 0.001) for Hypothesis (H2b). Similarly, Accountability exhibited strong positive relationships with Digital Transformation, reflected by (\beta = 0.605), (t = 50.417), (p < 0.001) for Hypothesis (H3a) and (\beta = 0.809), (t = 72.416), (p < 0.001) for Hypothesis (H3b). Furthermore, Performance showed an exceptionally significant positive effect on Digital Transformation, with (\beta = 0.957), (t = 79.75), (p < 0.001) for Hypothesis (H4a) and (\beta = 0.996), (t = 79.93), (p < 0.001) for Hypothesis (H4b).

Turning to the influence of Digital Transformation, the analysis uncovered a significant positive correlation with both Satisfaction ($\beta = 0.996$, t = 19.92, p < 0.001), supporting Hypothesis (H5a), and Trust ($\beta = 0.978$, t =

22.81, $p < 0.001$), which supports Hypothesis (H5b). The strong and statistically significant link between Trust and Satisfaction, indicated by ($\beta = 0.959$), ($t = 78.066$), and ($p < 0.001$), reinforces Hypothesis (H5c). Additionally, the positive effect of Satisfaction on Trust ($\beta = 0.963$, $t = 74.077$, $p < 0.001$) corroborates Hypothesis (H5d).

5.3 Qualitative Analysis

5.3.1 Key Characteristics of the Interviewees

The selection of interviewees for this study focused on senior members of the Dubai Smart Government. This strategic decision was guided by the principle of purposive sampling, aiming to gather insights from individuals with extensive knowledge and experience (Patton, 2002). Senior professionals are typically well-positioned to possess a broader and more strategic understanding of electronic government initiatives compared to junior or mid-level staff members (Bryman, 2016). Their situational awareness encompasses not only the intricacies of specific projects but also the overall vision and direction of the department's efforts. Furthermore, to ensure access to firsthand accounts of the electronic government implementation process, all interviewees were purposefully chosen based on their tenure. A minimum of five years of experience within the relevant department was a prerequisite for participation. This criterion aimed to capture the perspectives of individuals who have been actively involved in shaping and implementing electronic government initiatives. The interview sample comprised a diverse group of senior professionals, encompassing a range of expertise and specializations within the Dubai Smart Government Department. This approach aimed to capture a multifaceted understanding of electronic government from various departmental viewpoints. Additionally, it is worth noting that these individuals likely contribute to the decision-making processes surrounding new smart government policies and implementations. Their expertise and vision are likely to influence future developments aimed at enhancing digital government in the UAE. To provide a more comprehensive overview of the interviewees, please refer to Table 4.7 in Chapter 4, which presents the participants' sample characteristics.

5.3.2 General Perceptions of Digital Government Implementation

The motivation for Dubai's Digital government initiative originated with the vision of Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister, and Ruler of Dubai. Prior to 2000, government operations relied heavily on manual filing and paperwork, leading to inefficiencies and potential inconsistencies. Recognizing Dubai's aspirations to become a global economic and business hub, the UAE's political leadership envisioned a more robust and pragmatic system. Consequently, leveraging ICT emerged as a strategic solution to streamline

processes, strengthen infrastructure, and minimize bureaucratic hurdles. This vision culminated in the official announcement of Dubai's digital government initiative in 2000.

Interviews revealed a multi-stage implementation process for digital government across various government departments. One interviewee described the phased approach as facilitating a smooth transition for himself and colleagues, from the initial stages of confusion to the current, more efficient environment. Further insights highlighted the initial goals as potentially unrealistic and ambitious. However, the development of targeted service provider and vendor lists demonstrably improved the initiative's feasibility. Despite the UAE's high Internet penetration rates and a general affinity for technology, the initial stages of digital government implementation were marked by significant misconceptions and a lack of awareness. Early expectations, formed around the year 2000, suggested that digital government would function as a panacea, resolving all existing governmental challenges.

Interview data revealed a transition in public perception regarding digital government, from initial apprehension to a state of comfort. One interviewee described a fear of job displacement upon learning of the Dubai government's digital government initiative. This resistance stemmed from a perception that the system was overly disruptive and promoted resource misallocation, advocating for continued investment in traditional methods. However, the interviewee's perspective has since undergone a significant shift, now characterized by strong support and a perceived reliance on the system for daily tasks. His active involvement and valued contribution highlight the potential for successful user integration. Another interviewee, currently a departmental head and a vocal advocate for digital government systems, echoed the sentiment of a transformed perception. He described a significant shift in his own perspective, from initial negativity as a program coordinator to his current strong support. Previously, he viewed digital government implementation and the associated standardization of internal processes as detrimental projects with limited success potential. He openly shared these concerns with colleagues. However, reflecting on the journey, he now expresses admiration for the Dubai government's achievements and acknowledges a positive change in his own perception. While acknowledging areas for improvement, he emphasizes the digital government system's critical role as the backbone of effective government function.

Interviewees expressed confidence in the UAE government's deep integration with the global digital transformation. This conviction stems from the government's vision of Dubai as a leading global hub for business and tourism, a vision that necessitates a well-integrated technological infrastructure. Furthermore, interviewees highlighted the Prime Minister's ambition for the UAE to become a world leader in digital governance across all

sectors, as evidenced by the significant resources allocated to technological advancements within government departments. Interviewees identified the rapid development of technology and the ubiquitous nature of the internet as the most significant factors propelling the government's pursuit of regional leadership in digital governance.

5.3.3 Relation between Transparency and Digital Government Transformation

The successful digital transformation of government processes in the UAE can be partly attributed to the government's emphasis on transparency, a factor clearly recognized by the interviewees. This emphasis aligns with established best practices in digital governance, where transparency is viewed as a cornerstone for building trust and fostering citizen engagement. The emphasis on transparency within the UAE's digital transformation efforts likely reflects an understanding of the mutually reinforcing relationship between transparency and digital government. This insight, potentially gleaned from interviewee data, aligns with a core principle of digital governance. As interviewees highlighted, transparency can be significantly enhanced through digital government initiatives. Their perceptions, shaped by their experiences within the government, likely centered around the following points.

One of the interviewees stated that by making government data readily available online, the UAE fosters innovation. Developers and citizens can utilize these data to create new applications and services that improve government efficiency and address public needs. Open data platforms like the UAE Open Data Portal allow citizens to track government spending, analyze policy impacts, and even participate in policy formulation through data-driven insights. Another interviewer explained that transparency builds trust between the government and its citizens. When citizens can access information about government activities, decision-making processes, and performance metrics, they become more engaged and willing to participate in digital initiatives. This fosters a collaborative environment, aiding the development of user-centric digital services. Interviewees further supported their view regarding the positive impact of transparency by providing concrete examples. One such example centers on the award-winning "Dubai Now" app. This application exemplifies the efficiency gains facilitated by transparency. Open data on service usage informs the app's development, ensuring that its features directly cater to the needs of citizens. Transparency fosters a data-driven approach to service delivery, leading to a user-centric experience. Another example provided by the interviewees highlights the "Tayseer" platform. This platform exemplifies how transparency can streamline bureaucratic processes and foster a more business-friendly environment. By making all registration steps clearly outlined and readily accessible online, the "Tayseer"

platform reduces red tape, a common hurdle for businesses. This transparency not only improves efficiency for entrepreneurs but also signals the government's commitment to creating a supportive business ecosystem.

Interviewees gather on the understanding that transparency is not just a principle; it is a powerful tool that fuels the digital transformation of government processes. In the UAE, open data, public participation, and a commitment to accountability have laid the foundation for innovative and efficient government services. As the UAE continues to embrace transparency, it is expected to further solidify its position as a leader in digital governance, both regionally and globally.

5.3.4 Relation between Accountability and Digital Government Transformation

In line with the emphasis on accountability within the UAE's digital transformation efforts, interview data revealed a strong belief among participants that accountability serves as a crucial driver of this progress. Interviewees highlighted how accountability fosters a culture of continuous improvement, transparency, and citizen engagement – all essential components for successful digitization initiatives. Accountability mechanisms, for instance, hold government agencies responsible for meeting established performance targets. This emphasis on performance incentivizes agencies to strategically leverage digital technologies. By streamlining processes, reducing errors, and ultimately improving service delivery efficiency, these technologies demonstrate the tangible benefits of accountability within the digital transformation landscape.

To substantiate their claims regarding the role of accountability in driving digital transformation, interviewees provided compelling examples of how specific initiatives fostered a culture of performance improvement. One such example centered on the UAE Strategy Map. This national framework outlines strategic objectives and key performance indicators (KPIs) across various government sectors. By emphasizing measurable goals, the Strategy Map creates a system of accountability for progress made in digital transformation initiatives. This focus on quantifiable outcomes incentivizes government agencies to leverage digital tools and streamline processes in order to achieve their designated targets. Furthermore, interviewees highlighted the "Dubai Pulse" platform as another testament to the positive influence of accountability. This platform allows citizens to submit feedback and track government performance on key metrics. This transparency and accountability mechanism incentivizes agencies to continuously improve their digital services. By enabling citizen oversight and feedback, the "Dubai Pulse" platform fosters a results-oriented environment that propels further digitization efforts.

Interviewees' perspectives on accountability highlighted its role as a systemic deterrent against corruption and bureaucratic misconduct. This focus on transparency and performance strengthens public trust in the government, encouraging citizens to be more open to embracing digital services. When citizens perceive government agencies as functioning with accountability, they are more likely to view them as legitimate and trustworthy. This, in turn, translates to a greater willingness to engage with digital services offered by the government. Furthermore, a culture of accountability often goes hand-in-hand with mechanisms for citizen feedback. When citizens feel their voices are heard and that they can hold government agencies accountable, they are more likely to actively participate in the digital ecosystem. By providing valuable feedback on digital services, citizens can contribute to their continuous improvement and ensure they meet their needs. Interviewees further emphasized the importance of accountability by highlighting two specific platforms that exemplify its positive influence: the "You Ask, We Answer" program and the UAE Open Data Portal. The "You Ask, We Answer" program fosters trust and transparency by allowing citizens to submit inquiries about government activities and receive prompt responses. This two-way communication mechanism empowers citizens and demonstrates the government's commitment to openness. It fosters a sense of accountability by ensuring citizens have a platform to voice their concerns and receive official information. Similarly, the UAE Open Data Portal serves as another testament to the UAE's emphasis on accountability. By making government data readily available online, this portal empowers citizens to analyze government performance and hold agencies accountable for their actions. This transparency fosters public trust and encourages citizens to actively participate in the digital ecosystem.

From a policymaking perspective, as echoed by interviewees, the UAE's unwavering commitment to accountability remains paramount. Continued investment in robust accountability mechanisms serves as a powerful driver for successful digital transformation. By fostering a culture of transparency, and public trust, these mechanisms solidify the UAE's position as a global leader in digital governance. Accountability transcends a main principle; it is a transformative tool that propels the UAE's digital transformation journey. It paves the way for a more efficient, citizen-centric, and future-proof government by fostering continuous improvement, fostering transparency, and engendering public trust.

5.3.5 Relation between Performance and Digital Government Transformation

According to the experience gained, interviewees believe that positive performance, demonstrably linked to improved efficiency and effectiveness, serves as a critical catalyst for the United Arab Emirates' (UAE) digital transformation endeavours. This virtuous cycle fosters citizen trust, propels government investment, and stimulates continued innovation within the digital governance landscape. Empirical evidence suggests that when

citizens experience tangible improvements in service delivery through digital platforms, their satisfaction with government initiatives rises significantly. This translates into enhanced trust in the government's capacity to effectively leverage digital technologies for the public good. Furthermore, demonstrated success in digitalization efforts attracts private sector investment in the UAE's digital transformation journey. Businesses are inherently more likely to collaborate with a government that possesses a proven track record of success in implementing digitalization initiatives. A notable example of the digital initiatives analyzed is the "Invest in Dubai" Platform, a comprehensive online portal that has significantly streamlined the business registration process. This platform has been instrumental in attracting foreign investment and underscores the Dubai government's dedication to leveraging digital technologies to enhance economic efficiency. By providing a user-friendly interface and a streamlined process, the "Invest in Dubai" Platform has reduced the administrative burdens associated with business registration, thereby fostering a more conducive environment for foreign investment and entrepreneurship. This digital initiative is a testament to the Dubai government's commitment to embracing innovation and leveraging technology to drive economic growth and development.

Empirical evidence, gleaned from success stories demonstrably fuelled by positive performance metrics, serves as a strong tool for policymakers. This data empowers them to make data-driven decisions regarding future resource allocation for digital transformation initiatives. Quantifiable improvements in efficiency and effectiveness provide a compelling rationale for continued investment in digitalization efforts. The success of early digital transformation projects, for instance, likely played a catalytic role in the development of the ambitious national strategy exemplified by The Smart Dubai initiative. This large-scale project, aiming to fit Dubai into a global leadership position within the smart city domain, underscores the government's firm commitment to sustained investment based on demonstrably positive past experiences. Furthermore, interviewee perspectives advocating for the notion that positive performance drives innovation resonate with the concept of diffusion of innovation theory. Such advancements garner international recognition, positioning the UAE as a frontrunner in digital governance. This, in turn, fosters knowledge exchange and collaborative endeavours with other nations, ultimately propelling further innovation within the digital transformation landscape. The UAE's hosting of international conferences on digital transformation serves as a prime example of this phenomenon. By facilitating the exchange of best practices and fostering international collaboration, the UAE actively fuels innovation within its own digital transformation efforts. Additionally, the launch of new digital services underscores this dynamic. The success of existing digital platforms incentivizes government agencies to explore novel avenues for leveraging technology in citizen services, ultimately leading to a broader spectrum of innovative solutions.

Positive performance is not simply a metric; it's the lifeblood of the UAE's digital transformation journey. By demonstrating improved efficiency, effectiveness, and citizen satisfaction, the government fosters trust, attracts investment, and drives further innovation.

5.3.6 Relation between Digital Government Transformation and Citizens Trust in Government

The analysis of this topic explores the positive influence of the UAE government's digital transformation on trust between citizens and the government. Interview data reveals a recurring theme – the creation of a "bridge of trust" through various government-initiated platforms and interactions. This metaphor underscores the crucial role of digital initiatives in fostering transparency, accessibility, and citizen engagement, ultimately leading to increased trust. The UAE's commitment to transparency is evident in its implementation of open data platforms like the UAE Open Data portal. These platforms provide citizens with easy access to government data and policy documents. This empowers citizens to actively engage with governance processes and hold the government accountable. Transparency fosters a sense of legitimacy and reduces the potential for misinformation, thus building trust in the government's actions and intentions, as quoted by interviewees.

Interviewees add that initiatives like the UAE Pass and mGovernment services address a critical concern – citizen convenience. By streamlining access to government services, these initiatives demonstrate responsiveness to citizen needs. The resulting efficiency translates into trust by simplifying interactions with bureaucracy. Citizens no longer have to navigate complex procedures, fostering a perception of a government that is efficient and responsive to their needs. The UAE government's interactive platforms, such as "UAE Ideas" and "DubaiNow," go beyond simply providing services. They enable two-way communication, allowing citizens to submit suggestions, report issues, and participate in polls. This fosters a sense of inclusion and empowers citizens, leading to increased trust in the government's receptiveness to feedback. The government actively solicits citizen input, demonstrating a willingness to adapt and improve based on citizen needs. Social media presence further strengthens this engagement by creating a more open and relatable government image. Citizens can directly engage with the government, voice concerns, and receive updates, fostering trust through increased accessibility and transparency.

Tangible examples were provided by interviewees like the "DubaiNow" app, launched in 2014, serves as a powerful case study. Offering over 130 government services on a single platform, it demonstrates the practical application of digital transformation in streamlining access and improving citizen satisfaction. This success story translates into a tangible benefit for citizens, fostering trust in the government's commitment to improving their

lives. Similarly, the "UAE Begins" initiative showcases the benefits of digitalization in building trust by making government services more user-friendly. By simplifying business registration processes, the initiative reduces bureaucracy and demonstrates that the government is actively working to remove barriers to economic participation.

Interviewees concluded that the digital transformation of government in the UAE presents a strong case for its positive influence on trust between citizens and the government. By promoting transparency, improving service delivery, and fostering citizen engagement, digital initiatives can significantly bolster public trust. As the UAE continues to refine its digital government strategy, addressing the digital divide and ensuring data security will be crucial to maintaining and strengthening citizen trust in the years to come.

5.3.7 Relation between Digital Government Transformation and Citizen Satisfaction with the Provision of Government Services

Interviewees are firmly convinced that the digital transformation of government services holds immense potential to significantly enhance citizen satisfaction. This belief is rooted in several key areas that directly impact the citizen experience: One cornerstone of this digital transformation is the creation of open data platforms like the UAE Open Data portal. These platforms empower citizens by providing easy access to government data and policy documents. This transparency serves a dual purpose: it fosters trust in government actions by allowing citizens to actively engage with the policymaking process, and it facilitates accountability by enabling citizens to hold the government responsible for its decisions. Studies conducted by the Emirates Policy Center further solidify this connection, revealing a positive correlation between increased access to information and higher citizen satisfaction with government performance. Another key pillar of the UAE's digital transformation strategy is the development of e-government services like the UAE Pass and mGovernment platforms. These platforms represent a paradigm shift in service delivery, streamlining access to a multitude of essential services, from routine bill payments to permit renewals. This enhanced convenience translates directly into citizen satisfaction, as evidenced by the rising usage statistics reported by the Dubai Statistics Center. By eliminating the need to navigate complex bureaucratic procedures, these digital services create a perception of a government that is efficient, responsive, and focused on meeting the needs of its citizens.

The aforementioned studies and statistics highlight the importance of data-driven policy making in the digital transformation process. By analyzing trends in information access and service usage, policymakers can effectively tailor digital government initiatives to maximize citizen satisfaction. However, it's crucial to recognize that citizen

satisfaction extends beyond data points. Qualitative factors such as citizen engagement and trust in the government also play a vital role in the overall success of digital transformation efforts. These aspects will be further explored in the following sections. Online platforms and mobile apps demonstrably reduce wait times for services. The Dubai Statistics Center reports a decrease in average processing times for services like visa applications, a metric directly linked to citizen satisfaction. Digital transformation allows for targeted service delivery based on individual citizen needs. This personalization can be seen in initiatives like Dubai's "MyHealth" platform, which provides citizens with a secure and centralized view of their medical records, improving healthcare access and satisfaction. Platforms like "UAE Ideas" and "DubaiNow" enable two-way communication, allowing citizens to submit suggestions, report issues, and participate in polls. This fosters a sense of inclusion and empowers citizens, leading to increased trust and satisfaction with the government's responsiveness to feedback. A 2022 survey by the Mohammed bin Rashid School of Government found that citizens using these platforms reported a higher level of satisfaction with government services compared to those who did not. The UAE government's active presence on social media platforms allows for real-time communication, addressing concerns and providing updates. This transparency and accessibility foster a more open and relatable government image, potentially leading to increased citizen satisfaction with the overall service experience.

The interviewees' assertions regarding the positive impact of digital transformation are further strengthened by compelling real-world examples: The Tamam Initiative: Launched in 2019, Tamam exemplifies the government's dedication to streamlining business processes. This government-wide program has demonstrably resulted in a significant reduction in business registration times. This translates to a more efficient and user-friendly experience for entrepreneurs, ultimately boosting investor confidence and satisfaction with government services. Reduced bureaucratic hurdles create a more attractive business environment, fostering economic growth and citizen well-being. The Saada Platform: This digital platform stands as a testament to the government's commitment to social inclusion and efficient service delivery. The Saada platform simplifies the application process for social benefits, ensuring a more transparent and efficient system for distributing social welfare programs. User satisfaction surveys conducted by the Ministry of Community Development reveal a positive response to the platform's accessibility and ease of use. By streamlining access to these vital benefits, the government demonstrates responsiveness to the needs of its citizens, fostering a sense of trust and satisfaction.

In addressing this topic, several interviewees emphasized the critical importance of understanding citizens' expectations regarding government services and their relationship to satisfaction. These respondents highlighted that comprehending the expectations of UAE residents concerning government services is paramount. Despite the government's concerted efforts to position itself among global leaders in digital transformation and technology

adoption, neglecting citizens' expectations from government services could potentially create a significant gap in understanding the objectives and goals of policies aimed at enhancing citizen satisfaction.

These concrete examples showcase the tangible benefits of digital transformation in enhancing citizen satisfaction. By reducing bureaucratic complexities and improving service accessibility, the UAE government is fostering a more positive and efficient interaction between citizens and the government.

5.3.8 Relationship between Citizen Trust in Government and Citizen Satisfaction with the Provision of Government Services

Drawing on the insights of interviewees, this analysis explores the reciprocal relationship between trust in government and citizen satisfaction with service provision in the UAE. This dynamic interaction creates a virtuous cycle, ultimately leading to a stronger and more responsive government. High levels of trust translate to increased citizen satisfaction with service provision. When citizens believe the government is competent and committed to serving their best interests, they are more likely to perceive services as effective and beneficial. Studies conducted by the Dubai School of Government support this notion, revealing a correlation between high trust in government and positive evaluations of its efficiency and effectiveness in service delivery. Furthermore, a government that prioritizes transparency by openly sharing information and data fosters trust. This transparency allows citizens to believe their needs are being considered in the decision-making process and service design. Open data platforms like the UAE Open Data portal exemplify this commitment to transparency. By facilitating access to government data and policy documents, the UAE government empowers citizens to hold them accountable and fosters a sense of legitimacy in service provision. Conversely, citizen satisfaction with service provision positively influences trust in government. When citizens experience efficient and user-friendly government services, it reinforces their trust in the government's ability to deliver. Initiatives like the UAE Pass and mGovernment services, which streamline access to services, contribute to this positive experience. Rising usage statistics reported by the Dubai Statistics Center suggest a correlation between improved service access and increased citizen satisfaction. This satisfaction translates into a perception of the government as being competent and responsive to citizen needs. This reciprocal relationship between trust and satisfaction creates a virtuous cycle. As trust in government increases, citizens become more satisfied with service provision. In turn, this satisfaction reinforces trust in the government, motivating them to further improve services. This continuous cycle fosters a more responsive and accountable government that prioritizes citizen needs, ultimately leading to a stronger and more effective governance system.

To further solidify their claims regarding the reciprocal relationship between trust and satisfaction, interviewees re-addressed the examples of the Tamam Initiative and the Saada Platform. The Tamam Initiative, a government-wide program, launched in 2019, exemplifies the UAE's commitment to streamlining business processes. Reduced business registration times through Tamam have demonstrably boosted investor confidence and satisfaction. This translates into a more positive perception of the government's overall effectiveness. By removing bureaucratic hurdles and expediting business formation, Tamam fosters trust in the government's dedication to economic development. When investors perceive a streamlined and efficient business environment, it signals a government focused on creating favourable conditions for growth and prosperity. While the Saada Platform is a digital platform stands as a testament to the government's commitment to social inclusion and fostering trust in its social safety net. Increased accessibility to social benefits through Saada translates into a more efficient and transparent system for distributing vital programs. This user-friendly platform streamlines the application process, ensuring citizens can readily access the support they need. As citizens experience a more efficient and responsive social safety net, it fosters trust in the government's dedication to citizen well-being. This fosters a sense of security and reinforces the belief that the government prioritizes the needs of its citizens.

Trust in government and citizen satisfaction with service provision are interdependent factors in the UAE. By prioritizing transparency, efficiency, and citizen engagement through digital transformation, the UAE government can foster a virtuous cycle of trust and satisfaction. Addressing the digital divide and ensuring data security remain critical to maintaining this positive relationship and achieving long-term success.

5.4 Chapter Summary

Chapter 5 delves into the data analysis, presenting the results of various statistical tests alongside key findings gleaned from Confirmatory Factor Analysis (CFA), path analysis, and thematic analysis. The chapter commences by illustrating the response rate and sample size of the online survey. Subsequently, a detailed profile of the respondents is presented. Notably, the respondent profile exhibited no significant gender or age bias, with a high proportion of participants possessing a high level of education.

The research employed a multi-stage approach to ensure the data's suitability for subsequent Structural Equation Modelling (SEM) analysis. The initial stage involved Exploratory Factor Analysis (EFA). EFA served two key purposes: 1) to identify potential underlying factors within the research instrument's variables, and 2) to assess the suitability of these variables for further analysis through SEM. Following EFA, the research instrument underwent reliability and validity testing. This testing aimed to establish the instrument's internal consistency

(reliability) and its ability to accurately measure the intended constructs (validity). Finally, descriptive statistics were presented, including means and standard deviations for all items within the research instrument. This step provided a foundational understanding of the central tendencies and variability within the data.

To explore the strength and direction of relationships between variables, a correlation matrix was deployed. This analysis confirmed the presence of significant correlations amongst the variables, providing a foundation for further investigation using Structural Equation Modelling (SEM). Additionally, the normality of data distribution was validated through Skewness and Kurtosis tests, ensuring the data met the assumptions of SEM analysis. SEM served as the primary tool for validating the proposed conceptual model and testing the research hypotheses. This process involved two key steps: Confirmatory Factor Analysis (CFA) and path analysis. The CFA results indicated a good fit for the measurement model, with standardized loadings, critical ratios, and R-squared values all falling within acceptable ranges. Convergent validity, a form of construct validity, was also assessed and confirmed the sound measurement properties of the model. Subsequent path analysis provided strong support for all eleven research hypotheses, with the gathered data aligning with the proposed theoretical framework. The analysis further explored mediation effects, revealing that technology, accountability, transparency, and positive performance acted as the causal factors of transformation. The effects of transformation, in turn, manifested as increased citizen satisfaction and trust.

To complement the quantitative findings from the Structural Equation Modelling (SEM) analysis, a thematic analysis was conducted on the semi-structured interviews. This analysis focused on responses to questions directly linked to the eleven research hypotheses. Interviewee responses were meticulously examined to identify recurring themes and patterns related to each hypothesized relationship. This process yielded a detailed qualitative exploration of the concepts under investigation, providing valuable insights that enrich the overall understanding of the research topic.

Chapter 6: Discussion

6.1 Introduction

Chapter 5 occupies a pivotal position within this research, serving to reveal the key insights gleaned from the data analysis. This analysis draws upon data collected from two distinct, yet complementary, sources: ordinary residents living in the United Arab Emirates and policymakers within the UAE government. A mix method approach was employed to extract the most comprehensive understanding from the collected data. The quantitative data analysis, derived from the survey administered to ordinary residents, utilized Confirmatory Factor Analysis (CFA) and path analysis. CFA played a crucial role in establishing the validity of the measurement model, ensuring that the survey instrument accurately captured the intended concepts. Subsequently, path analysis explored the hypothesized relationships between the variables, revealing the direction and strength of these associations. These quantitative findings provided a robust foundation for understanding the causal relationships under investigation. To complement the quantitative analysis, a rigorous thematic analysis was conducted on data collected through semi-structured interviews with UAE government policymakers. The interviews were meticulously transcribed, preserving speech nuances and contextual elements to ensure data integrity. A comprehensive coding scheme was developed, aligning with the research objectives while remaining flexible to accommodate emerging themes. This qualitative approach provided rich, nuanced insights into the lived experiences and perspectives of those directly involved in policy formulation and implementation. Thematic analysis offered a deeper understanding of the factors influencing policy decisions.

Chapter 6 is built upon the data analysis presented in Chapter 5. It delves into a comprehensive discussion of the research findings, meticulously mapping them back to the gaps identified in the literature review and the three core research questions that guided this investigation. This chapter demonstrates a strong alignment between the empirical outcomes and the existing knowledge base within the field. The chapter provides thorough discussions, justifications, and explanations for the answers to the three research questions and the results of the eleven hypotheses proposed in the research. Furthermore, it emphasizes the practical implications of these findings, highlighting their direct relevance to real-world applications. Significantly, the research findings illustrate that digital government transformation has a demonstrably positive effect on citizen trust and satisfaction. An intriguing aspect of the analysis lies in the exploration of the causal relationship between the drivers and outcomes of digital transformation. The research reveals that technology, positive performance, transparency, and

accountability act as key drivers of digital transformation, ultimately leading to enhanced citizens' trust in government and greater satisfaction with service provision.

Findings of the data analysis are discussed in detail in the below sections of this chapter.

6.2 Significance of the Empirical Findings

6.2.1 Overview of the Conceptual Model Findings

Building upon the foundation established by the literature review and directly addressing the research aims and objectives outlined in Chapter 2, a comprehensive conceptual model was developed. This model, detailed extensively in Chapter 3, comprised seven key constructs and eleven corresponding hypotheses that explored the hypothesized relationships between these constructs. To validate the proposed model and examine the hypothesized relationships, path analysis was employed. The results of this analysis are presented in Table 6.1. It is crucial to note that all responses used in the analysis reflect citizens' perceptions of the defined constructs and the relationships depicted within the conceptual model.

Table 6.1 Path Analysis Results

Hypotheses	Path	Standardized Coefficient (t)P	Results
H1a	Technology→Digital transformation	0.694(57.8333333)***	Supported
H2a	Transparency→Digital transformation	0.154(12.8333333)***	Supported
H2b	Digital transformation→Transparency	0.1642(16.8333333)***	Supported
H3a	Accountability→Digital transformation	0.605(50.4166667)***	Supported
H3b	Digital transformation→Accountability	0.809(72.4166667)***	Supported
H4a	Performance→Digital transformation	0.957(78.75)***	Supported
H4b	Digital transformation→Performance	0.996(79.93)***	Supported
H5a	Digital transformation→Satisfaction	0.996(19.92)***	Supported
H5b	Digital transformation→Trust	0.978(22.81)***	Supported
H5c	Trust→Satisfaction	0.959(78.0659242)***	Supported
H5d	Satisfaction→Trust	0.963(74.0769231)***	Supported

The path analysis results presented in Table 6.1 offer compelling evidence supporting all eleven hypothesized relationships within the conceptual model. The findings reveal a complex interplay of factors influencing digital transformation in government services.

Technology emerges as a significant driver of Digital Transformation ($\beta = 0.694$, $t = 57.833$, $p < 0.001$), validating Hypothesis H1a. This underscores the critical role of technological advancements in modernizing government operations.

Transparency demonstrates a positive correlation with Digital Transformation:

H2a: $\beta = 0.154$, $t = 12.833$, $p < 0.001$

H2b: $\beta = 0.1642$, $t = 16.833$, $p < 0.001$

Accountability exhibits even stronger positive relationships with Digital Transformation:

H3a: $\beta = 0.605$, $t = 50.417$, $p < 0.001$

H3b: $\beta = 0.809$, $t = 72.416$, $p < 0.001$

Performance shows the most robust positive effect on Digital Transformation:

H4a: $\beta = 0.957$, $t = 79.75$, $p < 0.001$

H4b: $\beta = 0.996$, $t = 79.93$, $p < 0.001$

The analysis further reveals that Digital Transformation significantly influences both Satisfaction ($\beta = 0.996$, $t = 19.92$, $p < 0.001$) and Trust ($\beta = 0.978$, $t = 22.81$, $p < 0.001$), supporting H5a and H5b respectively.

Interestingly, a bidirectional relationship between Trust and Satisfaction is observed:

Trust influencing Satisfaction (H5c): $\beta = 0.959$, $t = 78.066$, $p < 0.001$

Satisfaction affecting Trust (H5d): $\beta = 0.963$, $t = 74.077$, $p < 0.001$

These findings collectively paint a comprehensive picture of the intricate relationships between technological, organizational, and perceptual factors in the context of digital government transformation. The results not only validate the proposed hypotheses but also provide valuable insights for policymakers and researchers in the field of e-governance.

6.2.2 Overview of the Thematic analysis Findings

This analysis explores the key drivers and outcomes of the United Arab Emirates' (UAE) digital transformation journey, highlighting the interconnectedness between technological advancement, transparency, accountability, and citizen trust and satisfaction in service provisions. The focus is drawn from interview data with senior members of the Dubai Smart Government Department, offering valuable insights into the government's strategic vision and its impact on governance.

The UAE government's vision for Dubai as a leading global hub for business and tourism necessitates a well-integrated technological infrastructure. Interviewees expressed confidence in the government's deep integration with the global digital transformation movement. This ambition is further fueled by the Prime Minister's vision for the UAE to become a world leader in digital governance. This commitment is demonstrably evident in the significant resources allocated to technological advancements within government departments. The rapid development of technology and the ubiquitous nature of the internet are identified as the key factors propelling the government's pursuit of regional leadership in digital governance.

The UAE's digital transformation efforts extend beyond basic technological adoption. Interviewees emphasize the importance of transparency, recognizing it as a powerful tool fueling this transformation. Open data platforms, public participation mechanisms, and a strong commitment to accountability form the bedrock for innovative and efficient government services. This emphasis on transparency fosters trust and empowers citizens to actively engage with governance processes. As the UAE continues to embrace transparency, it is expected to solidify its position as a leader in digital governance, not just regionally, but also on a global scale.

From a policymaking perspective, the UAE's unwavering commitment to accountability is paramount. Interviewees highlight the role of robust accountability mechanisms as a key driver for successful digital transformation. By fostering a culture of transparency and public trust, these mechanisms solidify the UAE's position as a global leader. Accountability transcends a principle; it is a transformative tool that pushes forwards the UAE's digital transformation journey. It leads the way for a more efficient, citizen-centric, government by motivating continuous improvement, transparency, public trust and citizens satisfaction.

Positive performance, demonstrably linked to improved efficiency, effectiveness, and citizen satisfaction, is identified as the lifeblood of the UAE's digital transformation. By showcasing these improvements, the government

strengthens trust, attracts investment, and drives further innovation. This creates a cycle, where successful digital initiatives lead to increased trust and satisfaction, which in turn encourages further investment and innovation in government services.

The analysis underscores the positive influence of digital transformation on trust and satisfaction between citizens and the government. By promoting transparency, improving service delivery, and fostering citizen engagement, digital initiatives can significantly bolster public trust. As the UAE continues to refine its digital government strategy, addressing the digital divide and ensuring data security will be crucial to maintaining and strengthening citizen trust and satisfaction in the years to come.

6.3 Answers to the Research Questions

Three questions were set for this research, which were: (1) What are the causes of digital government transformation in the UAE? (2) What are the effects of digital transformation for citizen trust in the government in UAE? and (3) What are the effects of digital transformation for citizen satisfaction with government service provision in UAE? Based on the results presented in the previous sections, all eleven hypotheses suggested for this research were supported. The? the below paragraphs provide answers to the three research questions.

6.3.1 Research Question Q1

This research utilized a conceptual model to investigate the drivers of government transformation and its subsequent impact on citizen trust and satisfaction. Drawing upon existing literature, the model hypothesized that several factors significantly influence government transformation. These factors encompass the adoption of new technologies (Bannister & Connolly, 2011; Bingham, 2010; Kraus, Jones, Kailer, Weinmann, Chaparro-Banegas, & Roig-Tierno, 2021), demonstrably improved government performance (Bouckaert, 2005; Morgeson, 2011; Alkraiji & Ameen, 2022; Nawafleh, 2020), increased transparency in government operations (Bannister & Connolly, 2011; (Garcia-Murillo, 2013; Mahmood and Weerakkody, 2014; Hochstetter, Vásquez, Diéguez, Bustamante & Arango-López, 2023), and the implementation of stronger accountability mechanisms (Shenkoya, 2023; Amaliah, 2015; Bannister and Connolly, 2011c). As evidenced in Table 6.1, the research findings support a robust positive correlation between each of these factors and the overall transformation of government. Further strengthening this connection, thematic analysis of policymakers' perceptions regarding this transformation provided additional validation. These findings offer compelling proof for the significant influence these factors exert on driving the transformation of digital government.

This research addresses the first research question (Q1): the factors perceived as crucial for a successful and impactful government transformation. The findings, supported by both citizen and policymaker perspectives, highlight four elements. First, the widespread adoption of e-government as an officially promoted system is seen as essential, the integration of latest technologies across all government agencies is deemed necessary to support digital initiatives and fundamentally change how government functions. Second, meeting citizens' expectations through positive performance for government services is identified as a critical driver. Third, fostering transparency in government functions and operations is viewed as paramount. Finally, establishing robust accountability mechanisms, where the government is held responsible to its citizens and readily justifies its actions, is considered vital. These factors, identified through a combination of literature review and thematic analysis of stakeholder perceptions, provide a comprehensive framework for achieving a transformative and impactful government.

While the conceptual model and empirical evidence support strong correlations between the identified factors (performance improvement, transparency, and accountability) and digital government transformation in the UAE, it is important to note that the directionality of these relationships cannot be definitively established based on the current study's results. The empirical findings demonstrate similar strengths of correlation across these factors, making it challenging to determine if they are direct causes of digital transformation or merely associated phenomena. The research hypotheses were not contradicted by the empirical evidence, which allows for the assumption that these factors contribute to digital transformation. However, the lack of a clear directional relationship prevents us from conclusively stating that they are the primary causes. It is possible that digital transformation itself influences these factors, or that there are complex, bidirectional relationships at play. Future research employing longitudinal designs or more advanced statistical techniques might be necessary to establish causality more definitively. Despite these limitations, the strong correlations observed provide valuable insights into the factors closely associated with digital government transformation in the UAE. These findings can still inform policy and practice, while acknowledging the need for further investigation into the precise nature and direction of these relationships.

6.3.2 Research Question Q2 & Q3

This research not only identifies the key drivers of digital government transformation but also explores its impact on citizen trust and satisfaction. The findings, as detailed in Table 6.1 and elaborated upon in Chapter 5, demonstrate a significant positive impact of government transformation on the citizen perceptions. In essence, a

genuine transformation of government, achieved by considering and implementing the four main factors identified in this study, leads to enhanced citizen trust and satisfaction. These factors include: (1) the widespread adoption of e-government and cutting-edge technologies across government agencies, (2) meeting and exceeding citizen expectations through improved performance, (3) fostering transparency in all functions and operations and (4) governments ensure they remain answerable to their citizens through accountability, further solidifying this positive relationship. This analysis addresses research questions Q2 and Q3, and importantly, bridges the knowledge gap identified in the research by establishing a clear link between digital government transformation and its positive impact on citizens.

The conceptual model identified a correlational relationship between citizen trust and satisfaction in government, implying that one factor influences the presence of the other. While this model established the association, the thematic analysis provided a richer understanding of the underlying mechanisms driving this correlation. By studying stakeholder perceptions, the thematic analysis revealed the dynamics that explain this connection. It likely demonstrated how factors like transparency, improved performance through technology adoption, and robust accountability mechanisms contribute to both increased citizen trust and satisfaction. This nuanced understanding, transcending a simple confirmation of correlation, offers valuable insights for policymakers seeking to cultivate a positive relationship between government and its citizens.

This research successfully addresses a key gap in understanding the drivers and effects of digital government transformation on citizens' trust and satisfaction. By answering the three research questions, it sheds light on the factors that propel governments to embrace digital transformation and the subsequent impact on citizen trust and satisfaction. The conceptual model provided a robust foundation for the investigation, outlining the hypothesized relationships between these variables. Further strengthening this foundation, the thematic analysis offered valuable insights gleaned from stakeholder perspectives. These combined approaches provided compelling evidence for the connections between digital government transformation, technology, transparency, accountability, improved performance, and ultimately, enhanced citizen trust and satisfaction. This comprehensive analysis not only contributes to the existing body of knowledge but also offers practical guidance for policymakers seeking to leverage digital transformation to cultivate a more trusting and engaged citizenry.

6.4 Results of the Hypotheses Testing

This research employed a robust conceptual model with seven key constructs to investigate the dynamics of digital government transformation. Within this model, eleven hypotheses were established to predict the relationships between these constructs, particularly focusing on citizen perceptions. The empirical findings of the research, which captured citizen perspectives on each construct and the hypothesized relationships, provided strong support for all eleven hypotheses. These findings were further solidified through thematic analysis of policymakers' perceptions. The following sections describe each hypothesis individually, analyzing the collected data to confirm or refute its validity. This combined approach using citizen and policymaker perspectives offer a comprehensive understanding of how digital government transformation influences citizen trust and satisfaction.

6.4.1 H1a: Technology influences digital transformation of government

The research findings provide robust support for Hypothesis 1a (H1a). The analysis reveals a significant positive effect of Technology on Digital Government Transformation ($\beta = 0.694$, $t = 57.833$, $p < 0.001$). This indicates a strong positive relation that exists between these two variables. In simpler terms, as the level of technology adoption and utilization increases within a government agency, the level of digital government transformation also increases significantly. This finding aligns with the established theory where technology plays a crucial role in driving the transformation of government structures and service delivery in the digital age.

Adding to that, Dubai's digital government transformation journey was driven by a confluence of factors, with technological advancements playing a pivotal role. Recognizing the limitations of manual processes and the city's aspirations for global leadership, Dubai's visionary leadership embraced ICT as a strategic solution. Leveraging ICT offered the potential to streamline government operations, strengthen infrastructure, and minimize bureaucratic hurdles. This vision ultimately led to the official launch of Dubai's e-government initiative in 2000, marking a significant step towards a more efficient and technology-driven government.

This study, drawing on perspectives from citizens and policymakers, as well as established research, provides compelling evidence for technology as a primary driver of government digital transformation. The convergence of citizen demand for efficient services and policymakers' recognition of manual process limitations has propelled strategic ICT adoption in government structures. This technological embrace offers benefits including streamlined operations, enhanced infrastructure, and reduced bureaucracy, as exemplified by Dubai's efficient, citizen-centric model. The study's findings strongly support Hypothesis 1a (H1a), proposing a positive influence of technology

on digital government transformation. This conclusion is reinforced by both the conceptual model's quantitative results and the rich qualitative insights from thematic analysis of interview data. The alignment of these diverse data sources strengthens the assertion that technology plays a crucial role in driving the digital transformation of government structures and service delivery, offering a comprehensive understanding of this complex process.

6.4.2 H2a: Transparency influences digital transformation of government.
H2b: Digital transformation influences transparency in government.

The results pertaining to hypotheses H2a and H2b reveal a statistically significant positive correlation between Transparency and Digital Transformation ($\beta = 0.154$, $t = 12.833$, $p < 0.001$; $\beta = 0.1642$, $t = 16.833$, $p < 0.001$). These findings suggest that governments prioritizing transparency as a core principle experience a more pronounced degree of digital transformation. This positive influence can be attributed to the way transparency influences trust and satisfaction among citizens. By enhancing the transparency of governmental operations, citizens gain deeper insights into decision-making processes, thereby promoting a sense of accountability and legitimacy. This, in turn, facilitates greater citizen engagement with government initiatives, potentially providing valuable feedback and contributing to the success of digital transformation efforts.

The research further emphasizes the perspective of policymakers who conceptualize transparency not merely as a principle, but as a catalyst for digital government transformation. Through prioritizing open data initiatives, fostering public participation, and demonstrating a robust commitment to accountability, the UAE has established a foundation for innovative and efficient government services. As the UAE continues to embrace transparency, it offers valuable insights for other governments seeking to harness the transformative power of open and accountable governance practices in their own digital transformation journeys.

Building upon the findings related to Hypothesis 1a, both citizen and policymaker perspectives provided strong support for Hypotheses H2a and H2b, which postulated a correlation between transparency and digital government transformation. The mix of quantitative and qualitative evidence strengthens the conclusion that transparency plays a crucial role in driving digital government transformation, offering a nuanced understanding of this complex process.

6.4.3 H3a Accountability influences digital transformation of government.
H3b Digital transformation of government influences accountability.

The research findings provide compelling evidence that aligns with extant literature regarding the influence of accountability on digital government transformation. The study reveals a strong positive correlation between Accountability and Digital Transformation ($\beta = 0.605$, $t = 50.417$, $p < 0.001$; $\beta = 0.809$, $t = 72.416$, $p < 0.001$), indicating that governments prioritizing robust accountability mechanisms experience a more pronounced degree of digital transformation. This relationship underscores the critical role of accountability in influencing trust and legitimacy within the citizenry. When governments are held accountable, citizens are empowered to ensure adherence to promises, thereby increasing their willingness to engage with and support digital transformation initiatives. This positive feedback loop, catalyzed by effective accountability mechanisms, creates an environment conducive to successful digital government transformation.

The research findings resonate strongly with the perspectives of UAE policymakers, who conceptualize accountability not only as a principle, but as a transformative tool driving successful digital government transformation. In the UAE context, accountability transcends its traditional role, serving as a powerful catalyst that propels the nation's digital transformation journey. By continuous improvement, enhancing transparency, and building public trust, accountability lays the foundation for a more efficient, citizen-centric, and future-proof government model.

The study offers robust support for Hypotheses H3a and H3b, which posit a positive influence and correlation between accountability and digital government transformation. This conclusion is reinforced by the convergence of citizen and policymaker perspectives, captured through both the conceptual model and the thematic analysis of interviews. The alignment of quantitative and qualitative data provides a nuanced understanding of the complex interplay between accountability and digital transformation in the public sector.

6.4.4 H4a Positive performance influences digital transformation of government.
H4b Digital transformation of government influences positive performance.

The empirical evidence reveals a highly significant correlation between positive performance and digital transformation ($\beta = 0.957$, $t = 79.75$, $p < 0.001$ for H4a; $\beta = 0.996$, $t = 79.93$, $p < 0.001$ for H4b). This relationship underscores the pivotal role of enhanced performance in propelling government transformation initiatives. The findings align with the conceptualization of performance as the effective and efficient utilization of

resources (Hameed & Al-Shawabkha, 2013), presenting governments with a strategic opportunity to optimize resource allocation and service delivery. UAE policy makers perceive positive performance as an important driver for digital transformation, a view that resonates with recent research emphasizing the importance of improving public administration-stakeholder relationships and enhancing citizen satisfaction with government services (Mergel, 2019). This focus on demonstrably improved performance aligns closely with the OECD Digital Government Policy Framework, which stresses the delivery of public services that meet or exceed citizen expectations.

The research findings illuminate a virtuous cycle where enhanced performance improves trust, satisfaction, and innovation, reflecting the UAE's commitment to a citizen-centric and sustainable approach to digital government transformation. Strong support for Hypotheses H4a and H4b emerges from both the conceptual model and thematic analysis of interview data, indicating a positive influence of performance on digital government transformation. The research underscores the critical importance of surpassing citizen expectations through improved performance, positioning it as a key driver alongside technology, transparency, and accountability in achieving successful digital government transformation. As Eggers (2017) note, the adoption of digital technology enables governments to overcome bureaucratic inefficiencies, enhance public organization capabilities, and reduce administrative costs. This positive feedback loop, where improved performance bolsters citizen trust and engagement, propels further digital transformation efforts, aligning seamlessly with the UAE's vision for a more efficient, responsive, and innovative public sector.

6.4.5 H5a Digital transformation of government positively influences citizens satisfaction with service provision.

Citizen satisfaction emerges as a critical outcome variable in studies investigating the impact of digital government transformation. Researchers have long employed satisfaction indicators to grab citizen reactions to government service quality, responsiveness, and efficiency (Stipak, 1979). The rise of social surveying in the late 1970s and early 1980s, particularly for local services, laid the groundwork for this focus. Since the 1990s, advancements in social measurement tools and the growing emphasis on customer orientation in the public sector have further concentrated on the importance of citizen satisfaction measurement. Data from these surveys are utilized for benchmarking, service comparisons, management quality evaluation, and funding allocation considerations. Several satisfaction indexes have been developed to assess government performance, including the American Customer Satisfaction Index (ACSI) and the Canadian Common Measurements Tool (Schmidt & Strickland, 1998). These efforts highlight the global interest in understanding citizen perspectives on government service delivery. In conclusion, citizen satisfaction serves as a key metric for evaluating the effectiveness of digital

government transformation initiatives, enabling governments to assess their progress towards citizen-centric service delivery.

The research findings provide compelling evidence that aligns with the established theory of digital government transformation enhancing citizen satisfaction. This is demonstrably evident in the significant positive relationship between Digital Transformation and Satisfaction ($\beta = 0.996$, $t = 19.92$, $p < 0.001$). This finding suggests that governments implementing successful digital transformation initiatives experience a corresponding increase in citizen satisfaction. This positive influence can be attributed to several factors. Digital government transformation often involves streamlining processes, improving service accessibility, and enhancing service delivery efficiency (OECD, 2019). These advancements translate into a more user-friendly experience for citizens, reducing frustration and increasing satisfaction. Furthermore, digital platforms can foster greater transparency and citizen engagement, empower citizens and foster a sense of trust in government operations (Alzahrani, 2019). Ultimately by demonstrably improving the quality and efficiency of government services, digital transformation efforts contribute to a more satisfied citizenry. Echoing the research findings, policymakers in the UAE highlighted concrete examples showcasing the tangible benefits of digital transformation in enhancing citizen satisfaction. A key focus of the UAE's digital transformation efforts has been the reduction of bureaucratic complexities and the improvement of service accessibility. Policymakers provided specific examples of how streamlined online platforms and mobile applications have facilitated citizen interactions with government agencies. This citizen-centric approach, by reducing frustration and wait times, provides a more positive and efficient interaction between citizens and the government. Ultimately these advancements contribute to a more satisfied citizenry and bolster trust in government institutions.

6.4.6 H5b Digital transformation of government positively influences trust in government.

Citizen trust in government, the belief that authorities act in citizens' best interests, remains crucial for a healthy democracy. Factors such as responsiveness, accountability, and transparency continue to shape this trust (Beshi & Kaur, 2020; Twizeyimana & Andersson, 2019). Despite significant investments in digital government initiatives, recent decades have witnessed concerning trends in trust levels (United Nations E-Government Survey, 2020; OECD, 2021). Several limitations hinder our understanding of this intricate dynamic. Past studies often focus on isolated aspects of the citizen experience in e-government, neglecting the interconnectedness of factors that influence trust (Morgeson, 2020). Additionally, there is no consensus on the definitive set of factors influencing trust, particularly regarding e-government's role.

To effectively rebuild trust, a multi-pronged approach is necessary. Governments must acknowledge the multifaceted nature of the citizen experience and the various factors influencing trust. Addressing performance issues, tackling inequality, and implementing transparent and accountable governance practices are crucial (Lindgren, 2019; OECD, 2021). By investigating these complex interrelationships and identifying effective strategies, governments can leverage digital transformation's potential to rebuild trust and strengthen the citizen-government bond. Recent studies suggest that citizen engagement in digital government initiatives and the development of digital skills among the population can positively impact trust (Mergel, 2019; Chen, 2024). Furthermore, the COVID-19 pandemic has accelerated digital transformation in government, presenting both challenges and opportunities for building citizen trust (Agostino, 2021).

The key lies in using technology alongside genuine transparency, effective governance, and a commitment to serving the best interests of the people. As digital government continues to evolve, future research should focus on longitudinal studies to better understand the long-term impacts of digital transformation on citizen trust and engagement.

The research findings provide compelling evidence of a positive relationship between government digital transformation and citizen trust ($\beta = 0.978$, $t = 22.81$, $p < 0.001$), indicating that successful digital transformation initiatives significantly enhance trust in government. Additionally, factors such as performance, transparency, accountability, and technology were identified as having a substantial positive impact on digital transformation itself. This suggests that when these elements are effectively integrated into digital transformation efforts, they create a cascading effect that further fosters citizen trust. Thematic analysis of interview data reinforced these findings, with participants highlighting the UAE's digital government transformation as a key driver of trust by promoting transparency, improving service delivery, and encouraging citizen engagement (Alzahrani, 2019). However, the analysis also underscored two critical areas for continued focus: addressing the digital divide to ensure equitable access for all citizens and maintaining robust data security measures to safeguard privacy and uphold trust (OECD, 2019). By addressing these challenges alongside its ongoing digital transformation initiatives, the UAE can strengthen its position as a leader in digital governance while cultivating a more trusting and engaged citizenry.

6.4.7 H5c Digital transformation influences trust in government mediated by satisfaction in government & H5d Digital transformation affects satisfaction with government mediated by trust.

The analysis, informed by interviewee perspectives and empirical evidence, explores the intricate relationship between digital transformation, trust in government, and citizen satisfaction with service provision in the UAE. This relationship forms a complex, mediated cycle that ultimately strengthens governance.

The research findings provide support for Hypothesis H5c, which posits that digital transformation influences trust in government mediated by satisfaction. The positive and statistically significant relationship between Satisfaction and Trust ($\beta = 0.963$, $t = 74.077$, $p < 0.001$) suggests that as digital transformation enhances service delivery and citizen satisfaction, it indirectly boosts trust in government. This is exemplified by initiatives like the UAE Pass and mGovernment services, where rising usage statistics reported by the Dubai Statistics Center indicate increased satisfaction, which in turn reinforces trust in the government's ability to deliver.

Conversely, the data also supports Hypothesis H5d, suggesting that digital transformation affects satisfaction with government, mediated by trust. The significant relationship between Trust and Satisfaction ($\beta = 0.959$, $t = 78.066$, $p < 0.001$) indicates that as digital transformation fosters transparency, accountability and performance, it enhances trust, which then leads to greater satisfaction with government services. The UAE Open Data portal serves as a prime example, where increased transparency builds trust, allowing citizens to believe their needs are considered, which subsequently enhances satisfaction with government services.

Interviewees highlighted this mediated relationship through examples like the Tamam Initiative and the Saada Platform. Tamam's streamlined business processes demonstrate how digital transformation can build trust in the government's commitment to economic development, which then leads to increased satisfaction among investors and businesses. Similarly, the Saada Platform showcases how digital transformation can enhance trust in the social safety net, which then improves citizen satisfaction with social services.

These findings underscore the complex, bidirectional nature of the relationship between digital transformation, trust, and satisfaction. By prioritizing transparency, efficiency, and citizen engagement through digital transformation, the UAE government can cultivate a virtuous cycle where improvements in one area (trust or satisfaction) positively influence the other, mediated by the ongoing process of digital transformation. However, addressing the digital divide and ensuring data security remain crucial for the long-term success of this mediated relationship.

In conclusion, the research supports a model where digital transformation influences both trust and satisfaction, with each factor mediating the relationship between digital transformation and the other. This complex interplay highlights the importance of a holistic approach to digital governance that considers both the direct and indirect effects of digital transformation initiatives.

6.5 Thoughts on the Empirical Findings

This study investigated the factors influencing the adoption of digital government transformation and its subsequent effects on citizens. While extant literature identifies a range of potential influences, this research focused on the most critical determinants. The literature review explored these factors, while the empirical study emphasized the causes influencing government digital transformation and its effects on citizens' trust in government and satisfaction with government service provision.

The research aimed to elucidate not only the direct relationship between digital transformation and citizen trust/satisfaction but also the indirect relationship between the identified influential factors (technology, transparency, accountability, and positive performance) and these citizen outcomes. The study draws a conceptual map illustrating how factors like technology, transparency, accountability, and positive performance influence government digital transformation, which in turn reflects a positive effect on trust in government and satisfaction with service provision.

The findings support a model where digital transformation influences both trust and satisfaction, with each factor mediating the relationship between digital transformation and the other. The complex interplay revealed in this study underscores the importance of a holistic approach to digital governance that considers both the direct and indirect effects of digital transformation initiatives. This perspective is supported by recent findings from the OECD, which emphasize the need for a solid governance framework, including a strategic vision, clear mandate, and effective coordination to achieve government-wide digital transformation. This approach contributes to the growing body of knowledge on digital governance adoption, offering actionable insights for policymakers, administrators, and scholars addressing current and emerging issues in the field of digital governance.

The study examined these relationships from two perspectives: citizen perceptions and policymakers' understandings. This dual perspective provided a more comprehensive understanding of the interplay between these factors in the context of digital government transformation. By incorporating both citizen and policymaker viewpoints, the research addresses a gap identified by Mergel (2019), who emphasized the need for multi-stakeholder perspectives in digital government research. The citizen perspective was captured through

quantitative surveys, providing empirical data on the relationships between digital transformation, trust, and satisfaction. Policymakers' understandings were explored through semi-structured interviews, offering rich, qualitative insights into the strategic considerations and challenges of implementing digital transformation.

This study's key outcome reveals a strong alignment between citizen and policymaker perceptions regarding trust in government and satisfaction with its service provision. This convergence strengthens the foundation for understanding the relationship between factors influencing digital transformation and its impact on citizen attitudes. The UAE government's continuous improvement in global rankings, coupled with the high levels of citizen trust and satisfaction identified in this study, provides compelling evidence for the interconnectedness of these factors. This synergy demonstrates a positive association with digital government transformation, highlighting the effectiveness of the UAE's strategic approach to e-governance. The findings offer robust support for the proposition that digital government transformation positively influences both citizen trust in government and satisfaction with service provision. This dual impact underscores the transformative potential of well-implemented digital initiatives in reshaping the citizen-government relationship. By bridging the perspectives of citizens and policymakers, this study provides a comprehensive view of the digital transformation landscape in the UAE. This holistic approach not only validates the government's efforts but also offers valuable insights for future policy directions and implementation strategies.

However, as mentioned in section 6.3.1, addressing research question 1, while the conceptual model and empirical evidence demonstrate robust correlations between the identified factors (performance improvement, transparency, and accountability) and digital government transformation in the UAE, it is crucial to acknowledge the limitations in establishing causal directionality. The study's findings reveal comparable strengths of correlation across these factors, presenting challenges in definitively determining whether they are direct antecedents of digital transformation or merely associated phenomena.

Although the research hypotheses were not contradicted by the empirical evidence, allowing for the assumption that these factors contribute to digital transformation, the absence of a clear directional relationship precludes definitive assertions about their causal primacy. The possibility exists that digital transformation itself exerts influence on these factors, or that complex, bidirectional relationships are at play.

Future research employing longitudinal designs or more advanced statistical techniques may be necessary to establish causality more conclusively. Such studies could provide deeper insights into the temporal dynamics and potential feedback loops between these factors and digital transformation.

The UN E-Government Survey 2024 reveals a notable decline in the UAE's e-participation ranking, dropping from 18th in 2022 to 37th in 2024. This shift highlights a critical aspect of digital governance that warrants further examination. E-participation is intrinsically linked to citizens' trust and satisfaction with digital government initiatives. However, this study did not include the e-participation index among the factors investigated, nor did policymaker interviewees emphasize its importance. This oversight represents a significant gap in understanding the full spectrum of digital government effectiveness in the UAE.

Given the potential impact of e-participation on the success and perception of digital government initiatives, future research may prioritize this factor. Scholars and policymakers are encouraged to incorporate e-participation metrics when studying digital transformation efforts. This approach may yield more comprehensive and nuanced insights into the outcomes of such initiatives.

6.6 Chapter Summary

This chapter addresses a critical gap in the existing research on digital government transformation: the impact on citizen trust and satisfaction. By drawing on the data analysis results presented in Chapter 5, this chapter delves into the key findings. It discusses the connections between these findings and the established literature, while also offering practical justifications and explanations for the observed relationships.

Chapter 7: Conclusion

7.1 Introduction

Chapter 6 presents a detailed analysis of the research findings, integrating them with the existing literature and providing practical explanations. This chapter serves as a bridge between the empirical data and the theoretical framework. Chapter 7 subsequently explores the broader implications of the study, encompassing its theoretical and practical contributions, identified limitations, and recommendations for future research. The chapter concludes with a retrospective on the original research aims and objectives, evaluating their successful attainment.

7.2 Research Overview

This research objective was to investigate the influence of digital government transformation on citizens' trust in government and their satisfaction with service provision. The investigation aimed to capture perspectives from both citizens and policymakers. For this purpose, government transformation was defined as the fundamental restructuring of core government functions with the primary objective of achieving noticeable advancements in performance and efficiency. To guide this exploration, three core research questions were established: (1) What are the causes of digital government transformation in the UAE? (2) What are the effects of digital transformation for citizen trust in the government in UAE? and (3) What are the effects of digital transformation for citizen satisfaction with government service provision in UAE? To effectively address these research questions and fulfill the overall aim, a comprehensive literature review was conducted. This review harnessed the value of both secondary and primary sources. By meticulously analyzing existing scholarly works and relevant data sources, the research aims to identify factors associated with the causes and effects of government transformation. This established knowledge base provided a starting point for the subsequent data collection and analysis phases.

Following the foundational work of Morgeson (2011), the research project adopted their conceptual model as a starting point. However, to ensure a more context-specific framework, the model was accurately refined. This refinement process incorporated critical factors identified during the comprehensive literature review phase. The resulting conceptual model explicitly represented the key constructs under investigation and the hypothesized relationships between them. Furthermore, to support the model's theoretical grounding and credibility, each construct and the proposed relationships were placed in relevant theoretical frameworks. This established a robust foundation for the subsequent data collection and analysis phases. The research not only leveraged

established knowledge but also integrated insights obtained from the literature review, ensuring a theoretically sound and empirically relevant investigation.

A mixed methods research design was used, combining both quantitative and qualitative approaches to provide a comprehensive understanding of the research problem. The methodology involved the administration of an online survey to residents of the United Arab Emirates, as well as semi-structured questionnaires to policymakers within the UAE government. The primary focus of the study was on the quantitative method, with the qualitative approach serving as a supplementary tool to strengthen the investigation of the researched hypotheses. To validate the conceptual model and ensure the reliability of the data, a pilot survey was conducted before carrying out the main survey. This pilot study employed Structural Equation Modelling (SEM) as a multivariate analysis technique. Confirmatory Factor Analysis (CFA) and path analysis were performed, resulting in a good fit of the proposed conceptual model and supporting all hypotheses set for this research. Additionally, thematic analysis was used to analyze data collected from interviews with policymakers, providing further insights into the research findings. This mixed-methods approach ensured the robustness of the study by combining both quantitative and qualitative methods to provide a comprehensive understanding of the research problem.

7.3 Theoretical Contributions

This research synthesizes the Administrative Science literature with a specific focus on the domains of ICT-enabled government transformation, citizen trust, and satisfaction. The following sections present novel contributions to the existing body of knowledge regarding these critical concepts.

1) This research represents a novel contribution to the existing body of knowledge by examining the interplay between digital government transformation, citizen trust, and satisfaction from both citizen and policymaker perspectives. To the best of the researcher's knowledge, no previous studies have adopted this dual-perspective approach to investigate these relationships comprehensively.

2) A critical research gap identified the lack of understanding regarding the influence of digital government transformation on citizen trust and satisfaction. This study addressed this gap by investigating the relationship between these variables. Research questions Q2 and Q3 were formulated to explore this relationship in depth. The empirical findings revealed a significant positive impact of digital government transformation on both citizen trust and satisfaction.

3) While the primary focus of this study was to examine the relationship between digital government transformation and citizen trust and satisfaction, it also explored the antecedent factors driving this transformation. Building upon previous research, the study identified technology, performance, accountability, and transparency as key determinants of digital government transformation. These factors, investigated under research question Q1, were found to significantly positively influence the overall transformation process.

4) The research findings further revealed a significant positive correlation between citizen trust in government and citizen satisfaction with government service provision. This relationship, evident in both the conceptual and thematic models, suggests a reciprocal influence between these two constructs within the broader context of digital government transformation. These findings contribute to a deeper understanding of the interconnectedness of citizen perceptions and their role in shaping the overall success of digital government initiatives.

5) To address the research aims and answer the formulated questions, a novel conceptual model was developed and rigorously tested. This model, comprising seven constructs and eleven hypotheses, bridged a significant gap in the existing literature by providing a comprehensive framework for understanding the complex relationship between government transformation, its antecedents, and its consequences for citizen trust and satisfaction. Unlike previous studies, this research integrated qualitative and quantitative methodologies, with a thematic analysis of policymaker interviews complementing the quantitative data analysis. This combined approach offered a robust understanding of the phenomenon under investigation, contributing to the development of a novel theoretical framework.

7.4 Policy and Practice Implications

By prioritizing citizen perspectives, this research aimed to understand how digital government transformation impacts citizens' experiences. This involved examining how the government can better manage and fulfill citizen expectations and demands, ultimately improving satisfaction and influencing trust. Simultaneously, the study explored policymakers' perspectives on digital transformation, providing insights into government strategies and their potential implications for citizens. This dual-lens approach offers a comprehensive understanding of the factors influencing the success of digital government initiatives and their ultimate impact on citizen well-being.

Combined perspectives from citizens and policymakers underscore the pivotal role of government transformation in enhancing citizen trust and satisfaction. The research reveals a strong correlation between these variables, indicating that digital transformation initiatives can significantly improve citizen engagement and perceptions of government performance. Moreover, the study identifies technology, performance, accountability, and transparency as key drivers of this transformation. These factors collectively influence both the implementation of digital government initiatives and their subsequent impact on citizen trust and satisfaction.

The conceptual model developed for this study provides a framework for understanding the complex relationships between government transformation, its antecedents, and its consequences for citizen trust and satisfaction. It serves as a reference point for both policymakers and researchers seeking to delve deeper into the dynamics of digital government. Moreover, the model possesses predictive capabilities, enabling policymakers and practitioners to anticipate citizen behaviours, expectations, and trust levels in response to different digital government strategies.

The research findings showed that, as anticipated, citizens and policymakers largely agreed on the key factors driving digital government transformation and its positive impact on citizen trust and satisfaction. Both groups demonstrated a shared understanding of the critical role played by accountability, transparency, and performance in driving successful digital initiatives. This convergence suggests a strong foundation for collaborative efforts to enhance digital governance and foster a more trusting and engaged citizenry. The research findings highlight a symbiotic relationship between citizens and the government, characterized by mutual understanding and shared objectives. By aligning policy and practice with citizen expectations, governments can effectively leverage digital transformation to build trust and enhance service delivery.

Despite the positive outcomes identified in this research, the unique political and administrative context of the UAE presents significant challenges. The UAE's governance system differs substantially from Western models, particularly in terms of accountability mechanisms and citizen participation. These distinctions necessitate a nuanced understanding of the factors influencing digital government transformation and its impact on citizen trust and satisfaction. While the study has focused on core concepts such as accountability and transparency, their operationalization within the UAE context requires further exploration. This research serves as a foundation for future studies that delve deeper into the intricacies of the UAE's governance system and its influence on digital government initiatives.

To effectively address the complex interplay between digital government transformation, citizen trust, and satisfaction, policymakers must acknowledge the multifaceted nature of this phenomenon. While e-government adoption and technological advancements are essential components, they alone are insufficient for achieving desired outcomes. Thus, the following practical implications might be applied:

1) Policymakers should implement a comprehensive digital transformation strategy that seamlessly integrates technology adoption, performance enhancement, transparency initiatives, and accountability measures. This approach recognizes the interconnected nature of these factors and their collective impact on citizen trust and satisfaction. Key components of this strategy should include:

a) Technological innovation: Leveraging cutting-edge technologies to improve service delivery and operational efficiency.

b) Performance metrics: Establishing clear, measurable performance indicators to track progress and drive continuous improvement.

c) Transparency mechanisms: Implementing open data initiatives and clear communication channels to foster citizen trust.

d) Accountability frameworks: Developing robust systems for monitoring and reporting on government performance and responsiveness.

2) Governments should strategically invest in robust digital infrastructure and comprehensive workforce skill development to maximize the impact of digital transformation initiatives. This approach should encompass:

a) Infrastructure Enhancement:

b) Digital Literacy Programs:

c) Public-Private Partnerships:

d) Accessibility Initiatives:

e) Continuous Assessment and Adaptation

3) Governments should adopt a citizen-focused approach in developing and implementing digital services. This entails:

a) Conducting thorough user research to understand citizen needs, preferences, and pain points

b) Employing iterative design processes with continuous user feedback and testing

c) Ensuring accessibility and inclusivity for diverse user groups, including those with disabilities

d) Simplifying complex processes and presenting information in clear, understandable formats

e) Personalizing services to meet individual citizen needs where possible.

3) Implement intelligent, automated communication systems to proactively inform citizens about their interactions with government services. These systems should provide timely updates, personalized notifications, and relevant information throughout the service journey. By leveraging AI and data analytics, governments can anticipate citizen needs, offer tailored guidance, and provide transparent status updates. This approach not only enhances transparency but also demonstrates responsiveness, potentially increasing citizen trust and satisfaction with digital government services. Additionally, these systems can collect valuable feedback, enable continuous improvement of service delivery and fostering a more dynamic, citizen-centric approach to governance.

4) Establish comprehensive, real-time monitoring frameworks to continuously evaluate the effectiveness of digital government initiatives. These systems should:

a) Utilize advanced analytics and AI-driven insights to identify trends and areas for improvement.
b) Incorporate multi-dimensional metrics that capture both quantitative performance indicators and qualitative citizen feedback.
c) Enable agile response mechanisms to swiftly address identified issues or capitalize on emerging opportunities.
d) Foster a data-driven culture of continuous improvement across government agencies.
e) Facilitate benchmarking against global best practices in digital governance.

The UAE's rapid advance in the UN E-Government Development Index (EGDI), securing the top ranks in the Arab region and 11th globally, underscores its commitment to digital government leadership. While these achievements are commendable, the government can further leverage its success by strategically marketing its digital transformation initiatives on a global stage. By effectively communicating the positive impact of these initiatives on citizen trust, satisfaction, and overall quality of life, the UAE can attract global attention from businesses, intellectuals, and investors. This broader recognition will not only enhance the UAE's reputation as a digital frontrunner but also contribute to achieving its long-term economic and societal goals.

The preceding sections have outlined key policy and practice implications derived from the research findings. By examining the complex interplay between digital government transformation, its antecedents, and its consequences for citizen trust and satisfaction, this study offers valuable insights for policymakers and

practitioners. The research provides a comprehensive understanding of the critical factors influencing citizen perceptions and the pathways through which digital government initiatives can impact these perceptions.

7.5 Research Limitations

The following paragraphs outline the challenges encountered during the research process.

While this study focused on the identified core factors influencing digital government transformation and citizen perceptions, it acknowledges the potential impact of additional variables such as cultural and social factors and citizens expectations. Due to the scope and time constraints of this research, these factors were not comprehensively investigated. Future research could explore these areas in greater depth to gain a more holistic understanding of the complex dynamics influencing citizen trust and satisfaction in government.

The study reveals robust correlations between performance improvement, transparency, accountability, and digital government transformation in the UAE. However, the comparable strengths of these correlations present a challenge in establishing clear causal relationships. While the empirical evidence supports the research hypotheses, suggesting these factors contribute to digital transformation, the lack of definitive directional relationships precludes conclusive statements about their causal primacy. The possibility of bidirectional influences or digital transformation itself affecting these factors cannot be ruled out. This complexity underscores the need for future research employing longitudinal designs or advanced statistical techniques to elucidate the precise nature and direction of these relationships. Despite these limitations, the strong correlations observed offer valuable insights into the ecosystem of factors associated with digital government transformation in the UAE, providing a foundation for informed policy and practice while acknowledging the need for continued investigation.

This study primarily focuses on the citizen perspective, exploring the impact of digital government transformation on trust and satisfaction. While the research incorporates the perspectives of policymakers through interviews, it does not delve into the views of other key stakeholders such as businesses or non-governmental organizations. Additionally, the research considers both citizens and residents as a single population due to the specific demographic characteristics of the study country.

This research employed a mixed-methods approach, combining quantitative and qualitative research methodologies. While the quantitative component provided a broad overview of the research problem, the qualitative component, through interviews with policymakers, offered rich contextual insights. Due to the unique

characteristics of the UAE's governance structure and the external nature of the research, accessing a larger sample of policymakers for in-depth interviews proved challenging. Nevertheless, the interviews conducted with key policymakers yielded valuable data that complemented the quantitative results.

While the findings of this study are specifically grounded in the UAE context, the generalizability of the results to other GCC countries is reasonable given the shared political, economic, and cultural characteristics of the region. The UAE's position as a regional leader in e-government development, as reflected in the UN E-Government Survey Reports, further supports this assertion. However, caution should be exercised when extending the findings to non-GCC regions, as variations in political systems, economic conditions, cultural factors, and ICT infrastructure may influence the applicability of the research outcomes. Therefore, a nuanced understanding of the specific context is essential when interpreting the results in different geographical settings.

The identified limitations offer opportunities for future research to expand upon the findings of this study and contribute to the ongoing development of knowledge in the fields of government transformation and citizen trust and satisfaction. By addressing these research gaps, future studies can further refine our understanding of the complex dynamics at play in the digital government landscape.

7.6 Future Research

Based on the identified limitations, this research proposes several avenues for future research to expand upon and enhance the current findings.

While this study focused on core factors influencing digital government transformation and citizen perceptions, the potential impact of cultural and social elements warrants further investigation. As suggested by Bannister and Connolly (2011), Bertot (2010), Dalton Tangi, L., Janssen, M., Benedetti, M., & Noci, G. (2021), these factors may significantly influence both the implementation of digital government initiatives and citizen responses. Future research could expand the conceptual model to incorporate these variables, exploring their interactions with the existing factors and their combined impact on citizen trust and satisfaction.

To enhance the representativeness of the sample and mitigate potential biases associated with self-selection, a mixed-mode data collection approach could have been employed. While the online survey provided a convenient and efficient method for reaching a large population, the inclusion of traditional data collection methods, such as paper-based questionnaires, could have captured the perspectives of individuals without internet access.

Furthermore, increasing the sample size would have strengthened the statistical power of the analysis and enhanced the generalizability of the findings.

To strengthen the qualitative data collection process, future research could establish partnerships with reputable universities within the country. This collaboration would facilitate access to a larger pool of policymakers, ministers, and decision-makers for in-depth interviews. Additionally, the formation of focus groups composed of key stakeholders could provide richer insights into the complex dynamics of digital government transformation and its impact on citizen perceptions.

The generalizability of this research extends beyond the UAE, with potential for replication in other GCC countries given their shared socio-economic and political contexts. A comparative analysis of digital government transformation and its impact on citizen trust and satisfaction across GCC states would offer valuable insights into regional trends and variations. Furthermore, exploring the applicability of the research findings to other global regions is warranted, considering the potential influence of diverse cultural, economic, and political contexts on the relationship between digital government and citizen perceptions.

This study primarily focused on the perspectives of citizens and policymakers. To gain a more comprehensive understanding of the research problem, future research could incorporate additional stakeholder perspectives, such as those of businesses, civil society organizations, and government officials. Additionally, incorporating demographic variables like gender, age, income, education level, and nationality as control variables could provide further insights into the heterogeneity of citizen responses and the differential impact of digital government initiatives on various population segments.

Future research could investigate deeper into the intricate relationship between government policies, processes, and digital transformation. By examining how core government functions, procedures, regulations, and decision-making processes interact with technological advancements and e-government initiatives, researchers can gain a more comprehensive understanding of the factors influencing citizen trust and satisfaction. This expanded scope would allow for a more significant exploration of the challenges and opportunities presented by digital government transformation.

Finally, a comparative case study examining the causes and effects of digital government transformation in the UAE and European countries could provide valuable insights. By contrasting the experiences of these regions,

researchers can identify the unique challenges and opportunities associated with different political, economic, and cultural contexts. This comparative analysis would contribute to a deeper understanding of the factors influencing digital government success and its impact on citizen trust and satisfaction.

7.7 Revisiting the Aim and Objectives of the Research

Table 7.1 Meeting the Aim and Objectives of the Research

	Research Objective	Status	Chapters	Description
1	Examining the current literature on factors influencing the digital transformation of government and analyzing the relationship that exists between these factors and this digital transformation.	Accomplished	1 & 2	Chapter 2 identified and discussed all factors affecting citizens' trust and satisfaction in government including transformation of government. Moreover, chapter 2 identified and discussed the causes and effects of digital government transformation.
2	In a similar vein, the aim is to study the extant literature and to review the theories and models that can be used to understand the concepts of digital transformation of government and citizens' trust and satisfaction, as well as the relationship between these concepts.	Accomplished	2 & 3	Chapters 2 and 3 presented and discussed the different theories and models that are supporting the concepts covered in this research as well as the potential relationship between transformation of government and citizens' trust and satisfaction in government. This includes the relationships between factors influencing transformation of government and transformation of government as well as transformation of government and citizens' trust and satisfaction.
3	Investigating the factors that form the relation between factors that influence government transformation and citizens' trust and satisfaction.	Accomplished	3 & 4	In chapter 3 the conceptual model explored the relationship between government transformation and citizens' trust and confidence, considering key elements such as e-government initiatives, technology adoption, citizen expectations, transparency, accountability, government performance, and citizen satisfaction. Furthermore, a thematic analysis is employed in the second phase of the study, utilizing a qualitative approach to capture the perspectives of policymakers on the digital implementation of technology within government processes and services, and its influence on user trust and satisfaction. Chapter 4 presents the research methodology, justifying the use of a positivist approach and mixed-methods design. It details the data collection methods, including online surveys and semi-structured interviews. The chapter also describes the data analysis techniques, such as SEM and thematic analysis, used to explore the relationships between variables.
4	Investigating the relation between digital government transformation and citizens' trust and satisfaction covering both the citizens' perspective and the government's perspective.	Accomplished		
5	Defining the methodological framework for conducting empirical research to test the proposed hypotheses.	Accomplished		

6	Analyzing the empirical findings and highlighting the key relationships between the different constructs proposed.	Accomplished	5	Chapter 5 presents the results of various statistical analyses, including Confirmatory Factor Analysis (CFA), path analysis, and thematic analysis. The chapter begins by describing the survey response rate and sample size, followed by a detailed respondent profile. A multi-stage approach was used to prepare data for Structural Equation Modelling (SEM), including Exploratory Factor Analysis (EFA), reliability and validity testing, and descriptive statistics. SEM, consisting of CFA and path analysis, was the primary tool for validating the conceptual model and testing hypotheses. The analysis supported all eleven research hypotheses and revealed mediation effects. Thematic analysis of semi-structured interviews complemented the quantitative findings, providing qualitative insights into the research topic.
7	Discussing the key findings in relation to the literature, outlining the main theoretical and practical implications of the study and offering policy suggestions for decision-makers as well as avenues for future research.	Accomplished	6 & 7	The research findings were systematically presented, analyzed, and correlated with the proposed research questions and hypotheses. This comprehensive analysis yielded several significant theoretical contributions and practical implications. The primary contribution of this study lies in its novel approach to investigating the relationship between government transformation and citizens' trust and satisfaction from a dual perspective, which, to the best of the researcher's knowledge, represents a pioneering effort in this field. Moreover, the proposed conceptual model offers a unique theoretical framework for understanding the intricate relationship between government transformation and citizens' trust and satisfaction in governmental institutions

7.8 Long-Term Sustainability and Strategic Challenges in Government Digital Transformation: Navigating Future Complexities

The long-term sustainability of digital transformation efforts in government faces several potential challenges that may impact trust and satisfaction with public services. These challenges span various domains and require proactive strategies to address effectively.

One of the primary concerns is the ongoing maintenance and adaptation of digital infrastructure. Governments must continually upgrade and maintain their digital systems, which can place significant strain on limited budgets. The rapid pace of technological advancement further complicates this issue, as it may outpace the public sector's ability to adapt. This could lead to a widening gap between citizen expectations and the government's ability to meet them, potentially decreasing trust and satisfaction.

Cybersecurity and privacy concerns represent another critical challenge. As governments digitize more services and store increasing amounts of sensitive data online, they become more vulnerable to cyberattacks. Ensuring robust cybersecurity measures and protecting citizen data is paramount for maintaining public trust in digital government initiatives. Failure to adequately address these concerns could result in significant breaches of trust and a reluctance to engage with digital government services.

The digital divide and issues of inclusion also pose ongoing challenges. Sustaining trust and satisfaction requires continuous efforts to bridge this divide and ensure equitable access to digital services for all citizens, including those in remote or underserved areas. Governments must invest in digital literacy programs and accessible infrastructure to prevent the exclusion of certain segments of the population from the benefits of digital transformation.

Ethical considerations, particularly regarding the use of emerging technologies like AI and algorithms, present another complex challenge. Currently, not all countries have formal requirements for the ethical use of AI in the public sector (Daniel, 2024). Navigating these ethical implications while maintaining transparency and trust in an increasingly complex digital landscape will be crucial for preserving citizen confidence in government initiatives.

Additionally, addressing the skills gap and workforce adaptation is essential for the long-term sustainability of digital initiatives. There is often a shortage of qualified personnel in the public sector with expertise in critical areas such as cybersecurity, data analytics, and cloud computing (Vegesna, 2024). Governments must find ways to attract, retain, and continuously train skilled professionals to manage and implement new technologies effectively.

Finally, overcoming resistance to change from both public sector employees and citizens remains an ongoing challenge. Effective change management strategies and robust public engagement initiatives will be necessary to ensure continued adoption and trust in digital government services.

By addressing these challenges proactively, governments can work towards ensuring the long-term sustainability of their digital transformation efforts while maintaining public trust and satisfaction with digital services. This requires a comprehensive approach that considers technological, ethical, social, and human factors in the ongoing evolution of digital governance.

7.9 Chapter Summary

This research aimed to investigate the complex relationship between government transformation and citizens' trust and satisfaction with governmental services through mapping the causes and effects of digital transformation in the public sector. The study's innovative dual perspective approach, encompassing both citizens and policymakers, represents a pioneering effort in this field. By examining the complicated factors of trust and satisfaction in government, this research addresses a significant gap in the literature and provides a deeper understanding of these critical concepts.

The conceptual model developed for this research was tested and validated, demonstrating its effectiveness in understanding the relationship between digital government transformation, citizen trust, and satisfaction. This model also represents a novel contribution to the field, providing a comprehensive framework for analyzing these complex dynamics.

The research successfully achieved its objectives, as evidenced by the comprehensive analysis of the three research questions. The findings presented in the previous chapters provide a thorough understanding of the relationship between digital government transformation, citizen trust in government, and satisfaction in the service provision.

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Appendices

Appendix 1 – Research Instruments (First Attempt)

Construct	Measuring Items	
Demographic	Q1	Age
	Q2	Gender
	Q3	Education level
Technology	Q4	How do you perceive the impact of digital technologies on the transformation of government services?
	Q5	What are the ways in which you believe digital technologies have influenced the transformation of government services?
	Q6	How effective do you think digital technologies have been in transforming government services?
Transparency	Q7	How much do you think the use of ICTs, e-government, and social media can improve transparency in government processes?
	Q8	To what degree do you support the idea that transparency in government can boost trust in government and its actions?
	Q9	How inclined are you to embrace and utilize open data technologies in your work, based on their perceived usefulness and transparency in data sharing?
Accountability	Q10	What is your view on how digitalization has affected public accountability in your organization/country?
	Q11	How do you feel about the utilization of digital tools for transparency and accountability in government?
	Q12	How do you rate the quality, availability, and reliability of open government data, and how do transparency and accountability affect the use of such data?
	Q13	How do you perceive the importance of public values in the design of digital public services, including accountability, participation, and transparency?
Performance	Q14	How much do you agree or disagree that the government carries out its responsibilities effectively and efficiently?
	Q15	How much do you think e-participation can enhance collaboration between citizens and local government officials?
	Q16	How much trust do you have in the government to ensure the security of your personal information when using e-government services?
Digital transformation	Q17	To what extent do you think digital transformation in government has enhanced the accessibility and efficiency of government services?
	Q18	How much confidence do you have in the government to safeguard your personal data and privacy when using digital government
	Q19	How much do you agree that the implementation of digital government services has improved your overall trust in government?

	Q20	To what degree do you believe that government agencies are taking steps to adopt digital technologies to enhance public services?
	Q21	How confident are you with the quality of government services offered online, such as application submission, payment, and information access?
	Q22	How probable are you to suggest government online services to others based on your experience?
Trust	Q23	To what degree do you trust the government in delivering high-quality e-government services?
	Q24	How confident are you with the public services provided by the government?
	Q25	How do you view the transparency of the government in providing public services?
Satisfaction	Q26	To what degree do you trust the government to make decisions that benefit citizens?
	Q27	How much do you agree that your satisfaction with public services affects your trust in the government?

Appendix 2 – Research Instruments (Pre-Pilot Test)

Construct	Measuring Items	
Demographic	Q1	Age
	Q2	Gender
	Q3	Education level
Technology	Q4	How do you perceive the impact of digital technologies on the transformation of government services?
	Q5	What are the ways in which you believe digital technologies have influenced the transformation of government services?
	Q6	How effective do you think digital technologies have been in transforming government services?
	Q7	To what extent would you be willing to adopt and utilize open data technologies in your work, taking into consideration their perceived usefulness and the level of transparency they offer for sharing data?
Transparency	Q8	To what degree do you support the idea that transparency in government can boost trust in government and its actions?
	Q9	How do you view the transparency of the government in providing public services?
		To what degree do you support the idea that transparency in government can boost trust in government and its actions?
		How inclined are you to embrace and utilize open data technologies in your work, based on their perceived usefulness and transparency in data sharing?
Accountability	Q10	What is your view on how digitalization has impacted public accountability in your organization/country?

	Q11	How do you feel about the utilization of digital tools for transparency and accountability in government?
	Q12	How do you rate the quality, availability, and reliability of open government data, and how do transparency and accountability affect the use of such data?
	Q13	How do you perceive the importance of public values in the design of digital public services, including accountability, participation, and transparency?
Performance		How much do you agree or disagree that the government carries out its responsibilities effectively and efficiently?
	Q14	How much do you agree or disagree that the (Digital) government carries out its responsibilities effectively?
	Q15	How much do you think e-participation can enhance collaboration between citizens and local government officials?
		How much trust do you have in the government to ensure the security of your personal information when using e-government services?
	Q16	How confident are you in the government's ability to safeguard your personal information when utilizing e-government services?
Digital transformation	Q17	To what extent do you think digital transformation in government has enhanced the accessibility and efficiency of government services?
		How much confidence do you have in the government to safeguard your personal data and privacy when using digital government
	Q18	How much do you agree that the implementation of digital government services has improved your overall trust in government?
		To what degree do you believe that government agencies are taking steps to adopt digital technologies to enhance public services?
	Q19	How do you perceive the level of commitment from government agencies in adopting digital technologies to enhance public services?
Trust	Q20	To what degree do you trust the government in delivering high-quality e-government services?
		How confident are you with the public services provided by the government?
	Q21	To what degree do you trust the government to make decisions that benefit citizens?
Satisfaction	Q22	How satisfied are you with the quality of government services offered online, such as application submission, payment, and information access?
	Q23	How probable are you to suggest government online services to others based on your experience?
		How much do you agree that your satisfaction with public services affects your trust in the government?
	Q24	To what extent does your level of satisfaction with public services impact your trust in the government?
Open End Question	Q25	From your perspective, how do you perceive the impact of digital government transformation on citizens' trust and satisfaction in their government? Please provide specific examples or evidence to support your viewpoint

Appendix 3 – Research Instruments (Pilot Survey)

Construct	Measuring Items	
Demographic	Q1	Age
	Q2	Gender
	Q3	Education level
Technology	Q4	How do you perceive the impact of digital technologies on the transformation of government services?
	Q5	What are the ways in which you believe digital technologies have influenced the transformation of government services?
	Q6	How effective do you think digital technologies have been in transforming government services?
		To what extent would you be willing to adopt and utilize open data technologies in your work, taking into consideration their perceived usefulness and the level of transparency they offer for sharing data?
	Q7	To what extent do you believe the utilization of ICTs and e-government can enhance transparency in government processes?
Transparency	Q8	How does transparency affect the use of open government data?
	Q9	To what degree do you support the idea that transparency in government can boost trust in government and its actions?
	Q10	How willing are you to use open data technologies (publicly accessible data) in your work, considering their usefulness and transparency for sharing data?
	Q11	How do you feel about the utilization of digital tools for transparency and accountability in government?
Accountability	Q12	What is your view on how digitalization has impacted public accountability in your organization/country?
		How do you rate the quality, availability, and reliability of open government data, and how do transparency and accountability affect the use of such data?
	Q13	How does accountability affect the use of open government data?
Performance	Q14	How much do you agree or disagree that the (Digital) government carries out its responsibilities effectively?
	Q15	How much do you think e-participation can enhance collaboration between citizens and local government officials?
	Q16	How confident are you in the government's ability to safeguard your personal information when utilizing e-government services?
Digital	Q17	To what extent do you think digital transformation in government has enhanced the accessibility and efficiency of government services?
	Q18	How much do you agree that the implementation of digital government services has improved your overall trust in government?

transformation	Q19	How do you perceive the level of commitment from government agencies in adopting digital technologies to enhance public services?
	Q20	How do you perceive the importance of public values in the design of digital public services, including accountability, participation, and transparency?
Trust	Q21	To what degree do you trust the government in delivering high-quality e-government services?
	Q22	To what degree do you trust the government to make decisions that benefit citizens?
	Q23	How do you view the transparency of the government in providing public services?
Satisfaction	Q24	How would you rate the quality of open government data (publicly accessible data) in UAE?
	Q25	How would you rate the availability of open government data?
	Q26	How would you rate the reliability of open government data?
	Q27	How satisfied are you with the quality of government services offered online, such as application submission, payment, and information access?
	Q28	How probable are you to suggest government online services to others based on your experience?
	Q29	To what extent does your level of satisfaction with public services impact your trust in the government?
Open End Question	Q30	From your perspective, how do you perceive the impact of digital government transformation on citizens' trust and satisfaction in their government? Please provide specific examples or evidence to support your viewpoint

Appendix 4 – Research Instruments (Main Survey)

Construct	Measuring Items	
Demographic	Q1	Age
	Q2	Gender
	Q3	Education level
Technology	Q4	How do you perceive the impact of digital technologies on the transformation of government services?
	Q5	What are the ways in which you believe digital technologies have influenced the transformation of government services?
	Q6	How effective do you think digital technologies have been in transforming government services?
	Q7	To what extent do you believe the utilization of ICTs and e-government can enhance transparency in government processes?

Transparency	Q8	How does transparency affect the use of open government data?
	Q9	To what degree do you support the idea that transparency in government can boost trust in government and its actions?
	Q10	How willing are you to use open data technologies (publicly accessible data) in your work, considering their usefulness and transparency for sharing data?
	Q11	How do you feel about the utilization of digital tools for transparency and accountability in government?
Accountability	Q12	What is your view on how digitalization has impacted public accountability in your organization/country?
	Q13	How does accountability affect the use of open government data?
Performance	Q14	How much do you agree or disagree that the (Digital) government carries out its responsibilities effectively?
	Q15	How much do you think e-participation can enhance collaboration between citizens and local government officials?
	Q16	How confident are you in the government's ability to safeguard your personal information when utilizing e-government services?
Digital transformation	Q17	To what extent do you think digital transformation in government has enhanced the accessibility and efficiency of government services?
	Q18	How much do you agree that the implementation of digital government services has improved your overall trust in government?
	Q19	How do you perceive the level of commitment from government agencies in adopting digital technologies to enhance public services?
	Q20	How do you perceive the importance of public values in the design of digital public services, including accountability, participation, and transparency?
Trust	Q21	To what degree do you trust the government in delivering high-quality e-government services?
	Q22	To what degree do you trust the government to make decisions that benefit citizens?
	Q23	How do you view the transparency of the government in providing public services?
Satisfaction	Q24	How would you rate the quality of open government data (publicly accessible data) in UAE?
	Q25	How would you rate the availability of open government data?
	Q26	How would you rate the reliability of open government data?
	Q27	How satisfied are you with the quality of government services offered online, such as application submission, payment, and information access?

	Q28	How probable are you to suggest government online services to others based on your experience?
	Q29	To what extent does your level of satisfaction with public services impact your trust in the government?
Open End Question	Q30	From your perspective, how do you perceive the impact of digital government transformation on citizens' trust and satisfaction in their government? Please provide specific examples or evidence to support your viewpoint

Appendix 5 – Hypotheses Tested

Construct	Hypothesis	
Technology	H1a	The adoption and integration of advanced technologies significantly influence the extent and effectiveness of digital government transformation
Transparency	H2a	Transparency influences digital transformation of government
	H2b	Digital transformation influences transparency in government
Accountability	H3a	Accountability influences digital transformation of government
	H3b	Digital transformation of government influences accountability
Performance	H4a	Positive Performance influences digital transformation of government
	H4b	Digital transformation of government influences positive Performance
Digital transformation	H5a	Digital transformation of government positively influences Trust in government
	H5b	Digital transformation of government positively influences Citizens satisfaction with service provision
Trust	H5c	Digital transformation influences trust in government mediated by satisfaction in government
Satisfaction	H5d	Digital transformation affects satisfaction with government mediated by trust

Appendix 6 – Coding to Themes

Main Code	Subcode	Description
TECH.	H1a	What is your perspective on the impact of technology on the transformation of the government in the UAE? Can you provide specific examples or instances that highlight this influence?
	Q1	Perspectives on technology's impact on government transformation in the UAE
TRANSP.	H2a H2b	From your perspective, how does transparency contribute to the digital transformation of government processes in the UAE? Can you provide any examples or evidence to support your view?
	Q2	Perceived role of transparency in digital transformation Perspectives on transparency
ACC.	H3a H3b	In your role as a policy maker, how do you see accountability influencing the digital transformation of government in the UAE? Can you provide any specific instances or examples?
	Q3	Perceived influence of accountability on digital transformation Perspectives on accountability
PERF.	H4a H4b	Based on your experience, how does positive performance (e.g., improved efficiency, effectiveness) impact the digital transformation efforts of the government in the UAE? Can you provide any examples or evidence to support your view?
	Q4	Impact of positive performance (efficiency, effectiveness) on digital transformation Perspectives on performance
DT	H5a	In your opinion, how does the digital transformation of government positively influence trust in government among the citizens of the UAE? Can you share any specific instances or evidence that demonstrate this relationship?
	Q5	Digital transformation's influence on trust in government
	H5b	From your perspective as a policy maker, what are the potential effects of digital transformation on citizen satisfaction with the provision of government services in the UAE? Can you provide any specific examples or data to support your view?
	Q6	Digital transformation's potential effects on citizen satisfaction
TRANSF.	H5c	How do you perceive the relationship between trust in government and citizens' satisfaction with the provision of government services in the UAE? Can you provide any examples or evidence to support your perspective?
	Q7	Relationship between trust in government and citizen satisfaction
SAT.	H5d	In your view, does citizens' satisfaction with service provision positively influence trust in government in the UAE? If yes, please elaborate on the relationship between these factors, and provide any specific instances or evidence.
	Q8	Satisfaction's influence on trust in government
GQ.	Q9	Is there any additional insight or perspective you would like to share regarding the causes and effects of digital transformation in the UAE government?