DIGITAL TRANSFORMATION STRATEGIES ON SERVICE DELIVERY OF COUNTY GOVERNMENTS IN KENYA: A CASE STUDY OF MURANG'A COUNTY

NATHAN RUGUT

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MASTERS OF BUSINESS ADMINISTRATION IN STRATEGIC MANAGEMENT OF

MOUNT KENYA UNIVERSITY

JUNE, 2025

DECLARATION AND APPROVAL

Declaration

This thesis/project is my original work and has never been presented for any academic award in any institution.

Name: **NATHAN RUGUT**

Reg. No. **MBA/2024/45585**

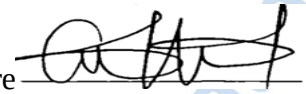
Signature  Date: **27-06-2025**

Approval

This thesis/project is being submitted for examination with our approval as University supervisors

Name: **DR. GEORGE MUTURI**

Institutional Affiliation: **MT KENYA UNIVERSITY**

Signature  Date**: 27-06-2025**

Name:……

Institutional Affiliation……..

Signature…… Date……

DEDICATION

I wish to dedicate this project to my parents and siblings for their unwavering support and to my fiancée, Gertrude Jerop, for always encouraging me.

ACKNOWLEDGEMENT

I am deeply grateful to God for wisdom throughout. I also wish to express my gratitude to my close family members and friends, particularly Benson Ndiwa, for their suggestions and words of encouragement. I also thank my able supervisor, Dr. George Muturi, for his prompt guidance in completing this research project. I also wish to thank the Mount Kenya University fraternity for your commitment to academic excellence and overall support.

TABLE OF CONTENTS

DECLARATION AND APPROVAL ..... **i**

ACKNOWLEDGEMENT ..... **iii**

LIST OF TABLES ..... **viii**

LIST OF FIGURES ..... **ix**

LIST OF ACRONYMS AND ABBREVIATIONS ..... **x**

ABSTRACT ..... **xi**

CHAPTER ONE **1**

INTRODUCTION **1**

1.0 Introduction 1

1.1 Background to the Study 1

1.1.1 Service Delivery in County Governments in Kenya 6

1.1.2 Murang'a County Government 7

1.2 Statement of the Problem 8

1.3. Purpose of the Study 9

1.3.1 Objectives of the Study 9

1.4 Research Hypotheses 9

1.5 Rationale of the Study 10

1.6 Significance of the Study 11

1.7 Scope of the Study 12

1.8 Study Limitations 12

1.9 Delimitation 13

1.10Assumptions of the Study 13

1.11 Operational Definition of Key Term 14

CHAPTER TWO **16**

LITERATURE REVIEW **16**

2.0 Introduction 16

2.1 Theoretical Review 16

2.1.1 Technical Acceptance Model 16

2.1.2 Diffusion of Innovation Theory 19

2.1.3 Theory of Change (ToC) 20

2.1.4 Resource-based View Theory (RBV) 21

2.2 Empirical Review 23

2.2.1 E-Government Services and Service Delivery 23

2.2.2 Digital Inclusion and Service Delivery 25

2.2.3 Digital Empowerment and Service Delivery 28

2.2.4 Digital Security and Resilience and Service Delivery 29

2.2.5 Service Delivery 31

2.3 Critical Review and Research Gaps 32

2.4 Conceptual Framework 33

2.5 Chapter Summary 34

CHAPTER THREE **35**

RESEARCH METHODOLOGY **35**

3.0 Introduction 35

3.1 Research Philosophy 35

3.2 Research Design 35

3.3 Target Population 35

3.4 Sample Design 36

3.4.1 Sample Size 36
3.4.2 Sampling Technique 37
3.5. Data Collection Methods 37
3.5.1 Data Collection Tools 37
3.5.2 Administration of Data Collection Tools 37
3.6 Testing for Validity and Reliability 38
3.6.1 Validity 38
3.6.2 Reliability 38
3.7 Data Analysis Procedure 38
3.8 Ethical Considerations 39
CHAPTER FOUR 40
RESEARCH FINDINGS, ANALYSIS AND DISCUSSION 40
4.1 Introduction 40
4.2 Response Rate 40
4.3 Demographic Information on Respondents 41
4.4 Pilot Testing Results 43
4.4.1 Reliability Test 43
4.4.2 Validity Test 44
4.5 Descriptive Analysis 45
4.5.1 E-Government Services 45
4.5.2 Digital Inclusion Strategies 47
4.5.3 Digital Empowerment Strategies 50
4.5.4 Digital Security and Resilience Measures 52
4.5.5 Service Delivery 55

4.6 Inferential Analysis Results 57
4.6.1 Correlation Analysis Results 57
4.6.2 Regression Analysis Results 60
CHAPTER FIVE 65
DISCUSSION OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS 65
5.1 Introduction 65
5.2 Summary of the Findings 65
5.2.1 E-Government Services on Service Delivery 65
5.2.2 Digital Inclusion Strategies on Service Delivery 66
5.2.3 Digital Empowerment Strategies on Service Delivery 67
5.2.4 Digital Security and Resilience Measures on Service Delivery 68
5.3 Conclusions 69
5.4 Recommendations 71
5.5 Recommendation for Further Research 72
REFERENCES **74**
APPENDICES **80**
Appendix I: Questionnaire 80
Appendix II: ERC Certificate 85
Appendix III: Introduction Letter from MKU 87
Appendix IV: NACOSTI Research License 88
Appendix V: Research Authorization 90
Appendix VI: Turnitin Report 93
Appendix VII: Research Site Map **95**

LIST OF TABLES

Table 1: Sample Size 36

Table 2: Response Rate 40

Table 3: Demographic Characteristics 41

Table 4: Reliability Analysis Results 43

Table 5: Validity Test Results 44

Table 6: Descriptive Statistics on E-government Services 48

Table 7:Descriptive Statistics on Digital Inclusion Strategies 48

Table 8: Descriptive Statistics on Digital Empowerment Strategies 50

Table 9: Descriptive Statistics on Digital Security and Resilience Measures 53

Table 10:Descriptive Statistics on Service Delivery 55

Table 11: Correlation Matrix 58

Table 12: Model Summary 60

Table 13: Analysis of Variance (ANOVA) Results 61

Table 14: Multiple Regression of Coefficients 61

LIST OF FIGURES

Figure 2.1: Theoretical Framework. 22

Figure 2.2: Conceptual Framework……34

LIST OF ACRONYMS AND ABBREVIATIONS

ICT	Information and Communications Technology
GDP	Gross Domestic Product
CBK	Central Bank of Kenya
EFA	Exploratory Factor Analysis
KMO	Kaiser-Meyer-Olkin
CEC	County Executive Committees
EACC	Ethics and Anti-Corruption Commission
IT	Information Technology
NACOSTI	National Commission of Science Technology and Innovation
TAM	Technology Acceptance Model
ToC	Theory of Change
RBV	Resource-based View

ABSTRACT

With the rapid digitalization witnessed today, delivering public services through digital technologies is a crucial topic for governments worldwide. Integrating novel infrastructures and policies has enabled national and local governments to increase access to quality public services, including health services, land and business registration, education, and infrastructure services. The widespread use of technologies in the public realm has increased access to digital services and platforms for marginalized groups or those unfamiliar with digital services. This research focused on how digital transformation strategies such as e-government services, digital inclusion, digital empowerment, and digital security and resilience, which are the independent variables, influence service delivery, which is the dependent variable. The study focused on service delivery at county government levels, specifically Murang'a County, which is known for its remarkable efforts in integrating digital infrastructure to provide fundamental services. The study used the Technological Acceptance Model, Diffusions of Innovation Theory, and Theory of Change to inform the independent variables and the Resource-based View theory to support the dependent variable. The study employed a descriptive research approach to paint a vivid picture of the patterns and associations between the study's variables. The unit of analysis comprised Murang'a County, focusing on staff and residents who were selected via a census approach. The study's target population was 88 participants, who were chosen through purposive sampling. The respondents included staff from the County Executive Committee, ICT County Assembly Committee, ICT staff, departmental heads, employees within different departments, and residents of Murang'a County per ward. The sample size was obtained using Yamane's Formula (1965). Data collection was done via physical and email questionnaires distributed by the researcher. It was then analyzed using descriptive and inferential statistics, represented through mean and percentages. A multiple linear regression model was also adopted in addition to SPSS software to determine the variables' relation. The findings revealed that digital transformation strategies, e-government services, digital inclusion strategies, digital empowerment strategies, and digital security resilience measures jointly explain 60.8% of the variation in service delivery in Murang'a County Government ($R^2 = 0.608$, Adjusted $R^2 = 0.589$). The ANOVA findings showed that the model significantly explained the relationship between the independent variables and service delivery ($F = 31.426$, $p = 0.000$). Additionally, the findings showed that e-government services ($\beta = 0.185$, $p = 0.033$), digital empowerment strategies ($\beta = 0.494$, $p = 0.000$), and digital security resilience measures ($\beta = 0.478$, $p = 0.000$) were positively and significantly related to service delivery. However, digital inclusion strategies ($\beta = 0.070$, $p = 0.472$) were positively but not significantly related. The study concluded that e-government services, digital empowerment, and digital security and resilience positively and significantly impact service delivery in Murang'a County. However, digital inclusion also plays a role in service delivery, even though it is not as significant as e-government services, digital empowerment, and digital security resilience. Given the findings, the study recommends that the Murang'a County Government enhance digital security policies, invest in digital literacy programs, and improve e-government service accessibility to optimize service delivery.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This section outlines the study's background and highlights its gaps. It also outlines the research objectives and hypotheses that will be tested. Moreover, this chapter delineates the study's significance, scope, justification, limitations, delimitations, assumptions, and definition of key terms.

1.1 Background to the Study

County Government service delivery has become a central focus of devolved units in Kenya over the past few years (KIPPRA, 2023). According to the Kenyan Constitution, Article 232 (1) (c) and Section 7 (1) of the Values and Principles Act, 2015, County Governments in Kenya are mandated to provide prompt, impartial, effective, and equitable public services (Ministry of Public Service, Performance, and Delivery Management, 2017). The Constitution of Kenya (2010) paved the way for a transformative public service delivery via devolution, bringing service delivery closer to the public (KIPPRA, 2023). At the heart of this process lies 47 county governments expected to revolutionize service delivery and foster local development nationwide. Kamau (2022) defines service delivery as the process by which government officials provide and distribute services to citizens, business entities, and other key stakeholders (Riany, Were, & Kihara, 2019). In a local county government, service delivery can be defined as the distribution of fundamental services such as water, health services, electricity, traffic controls, sewage disposal, refuse collection, maintenance, and streetlighting to the residents (Riany, 2021).

High-quality service delivery is paramount for a government to function effectively and satisfy the diverse necessities of its residents, as denoted (Onyoni & Kavale, 2018; Riany, 2021; Riany, Were, & Kihara, 2019). Firstly, enhanced service delivery fosters social equity, improving the living standards of citizens (Onyoni & Kavale, 2018). Secondly, enhanced service delivery fosters economic growth and development (Shibambu & Ngoepe, 2024). Services like increased access to quality healthcare and education promote workforce productivity, whereas government services such as business licensing and good infrastructure promote business activities (Riany, 2021). Importantly, high-quality service delivery fosters government accountability and efficiency, ensuring proper resource allocation and reducing mismanagement and corruption cases (Onyoni

& Kavale, 2018).

According to Kamau (2022), measuring the county government's service delivery is key to assessing efficiency, effectiveness, and public satisfaction. One of the key performance indicators (KPIs) to track service delivery in counties includes accessibility, which entails the percentage or populations of citizens with access to fundamental services (Kamau, 2022). Other KPIs include public satisfaction, which denotes citizens' contentment with the experiences of government services, and service delivery time, which describes the average time taken to deliver government services (Akida & Kandiri, 2024). An amalgamation of these indicators provides a comprehensive assessment of county government service delivery, ensuring the public receives timely, accessible, and satisfying services.

Nkgapele (2024) asserted that digital technologies, including e-government strategies, have opened up new possibilities for fostering service delivery via online platforms, data-driven decision-making, and mobile applications. Gisemba and Iravo (2019) define digitalization as implementing digital technologies and innovations to improve existing processes. This includes enhancing service efficiency by automating workflows without altering processes (Akida & Kandiri, 2024). Riany (2021) further defines digital transformation strategies as comprehensive practices that entail rethinking and redesigning processes, interactions, and services to leverage the maximum potential of digital technologies and create novel ways of delivering services to the public. According to Kamau (2022), digital transformation strategies in governments are diverse as they encompass innovations with a focus on accessibility, inclusivity, and timeliness of public service delivery. This study concentrated on E-Government services, digital inclusion, digital empowerment, and digital security and resilience as the primary digital transformation strategies to enhance public service delivery within Murang'a County.

Globally, European nations are primarily recognized for leveraging digital innovations to foster service delivery in education, manufacturing, transportation, and healthcare (Białczyk et al., 2024). According to a recent WHO report ranking countries with leading digital healthcare systems, Estonia has ranked as the first country to digitize 99% of public services, specifically healthcare services (World Health Organization, 2023). Almost 100% of the country's population has a digital health record with digitized prescriptions and online consultation services with healthcare professionals, regardless of characteristics like income, socioeconomic status, and geographical

region (Shea, 2019). Regarding the delivery of education services, the United Kingdom was ranked among the best in digitizing education access and quality, registering 81.9% out of 100% in access to digitalized education programs to residents (Perrotta, 2018). This is primarily attributed to the government's funding initiatives to doter digital infrastructure in learning institutions, ensuring access to quality education for individuals from different backgrounds (Perrotta, 2018).

Asian nations have also embarked on rigorous adoption of digital transformation initiatives to provide services to residents in different sectors (Yu, Xue, & Mahendran, 2022). A recent report from the World Bank indicates that China is among the pioneering nations with digitalized services in the healthcare and manufacturing sectors, with exemplary digital innovations that aim to facilitate improved services to residents (World Bank, 2024). For instance, the country integrates high Artificial Intelligence innovations, electronic health records, and telemedicine services to detect diseases, store patient records, and provide remote consultations, especially to those in low-income families (Nadhamuni et al., 2021; Yu, Xue, & Mahendran, 2022).

India's local regions have adopted significant digital innovations, facilitating improved healthcare service delivery (Dash, 2020). According to a recent World Health Organization (2023) report, the National Health Authority in India recently implemented the Ayushman Bharat Digital Mission strategy to establish a countrywide digital health ecosystem (Selvan & Vivek, 2023). The primary objective of this strategy is to centralize hospitals and remote clinic databases for increased access, offer every citizen a digital health ID to access medical services, and foster storage of digital records to improve treatment (Selvan & Vivek, 2023). India also leverages digital infrastructure, such as the e-Sanjeevani initiative by the Ministry of Health and Family Welfare, to provide free telemedicine services to underserved and remote populations (Nadhamuni et al., 2021).

Singapore ranks among the leading Asian countries with digitalized education systems and strategies to enhance educational delivery (Lee, Nozaki, & Umeda, 2018). The country has adopted digitized strategies such as the National Digital Literacy Programme that equips learners in secondary schools from remote areas with personal learning devices (Han, Wu, & Zheng, 2020). Singapore has also implemented over four ICT master plans to integrate infrastructure to deliver educational amenities in urban and remote regions to enhance learning experiences (Han, Wu, & Zheng, 2020).

In Africa, South Africa is among the countries with a devolved government consisting of local and

provincial municipalities, both of which have actively pushed for digital transformation practices to enhance service delivery (Alao, 2019). In a report by Meyer and Gent (2016), the implementation of the National e-Government Strategy and Roadmap in 2017 in South Africa has steered digital solutions in the municipalities to form an inclusive digital society (Alao, 2019). The initiative fosters innovative use of ICT, including applications, websites, mobile devices, and other platforms to link the public with the local governments to foster efficient delivery of services (Jakoet-Salie, 2020). In another report, the country has also provided provincial initiatives like Western Cape Access programs, Open Data Portals, and Gauteng Broadband Networks, which have a common goal of bridging the digital divide, enabling vulnerable populations from remote areas to access efficient local government services (Alao, Chigona, & Lwoga, 2017; Jakoet-Salie, 2020). However, despite these digital advancements in provincial and local municipalities, the South African government continues to face hurdles such as digital illiteracy from local citizens and civil servants, insufficient digital infrastructure, and limited access to individuals in remote regions (African Union, 2023).

In West Africa, Nigeria also has a devolved government with a federal system consisting of 36 states, whereby local governments mark the grassroots of service delivery to the citizens (Omoleke et al., 2023). Before the advent of digital technologies in Nigeria's local governments, there was abysmal public service delivery marked by corruption, bureaucratic delays, and ineffectiveness (Magbadelo, 2020). However, this changed with the introduction of ICT infrastructure in local governments such as Ondo state, with initiatives like the Kaadi Igbe Ayo (KIA) project that captures citizens' information to promote access to various public services like healthcare and education (Ofoma, 2021). In Gombe state, the local government has the Gombe State Geographic Information System that facilitates a digitalized land administration method to streamline land ownership, registration, and acquisition processes (Okorie et al., 2024; Ogunyemi & Olamide, 2021). Remarkably, Lagos state has been the leading state with exemplary digital transformation strategies that leverage technology to provide e-government services such as enhancing revenue collection, allowing public participation, and business registrations (Omoleke et al., 2023).

In East Africa, nations like Uganda and Rwanda have embraced digital transformation innovations in local governments through various initiatives to improve services (African Union, 2023). Rwanda has made remarkable strides in optimizing digital innovations in local government service delivery. For instance, following the COVID-19 pandemic, the country launched a Home-Based

Care (HBC) health program in 2020 to increase access to healthcare services for citizens in remote areas (Babili et al., 2023). The program leverages digital advancements in healthcare technologies like telemedicine and telehealth to support and monitor patients, which has enhanced access to healthcare provisions and reduced medical expenses for local residents (World Health Organization, 2023). These cases reflect both Uganda's and Rwanda's dedication and commitment to leveraging digital innovations to foster public service delivery across different sectors despite the hurdles they constantly face, such as inadequate digital infrastructure, corruption, and bureaucratic inefficiencies (African Union, 2023).

In a recent report by the Ministry of Health in the Government of Uganda (2023), local governments introduced the Health Information and Digital Health (HIDH) strategic plan to provide strategic direction and interventions for digitizing health information systems and management. The initiative integrates scalable technologies to promote health service delivery and establish sustainable value in the local government's healthcare systems, explicitly targeting Ugandans from vulnerable populations, predominantly low-income households (World Health Organization, 2023). Besides healthcare services, UNICEF introduced the U-Report program, which entails a mobile platform that enables community engagement, especially the youth, to provide feedback and perspectives on local public service delivery (Patrick, 2023).

Locally, Kenya's county governments have also embarked on integrating new technology advancements to increase public service delivery. A good example can be witnessed in Murang'a County, where the current Governor, Irungu Kang'ata, commenced a Health Management Information System (MIS) to enhance medical services at Murang'a Level Five Hospital in July 2023 (Kinyanjui, 2025). This digital initiative is the first in level five hospitals nationwide to facilitate electronic patient registration and storage of medical records, enduring automation in delivering healthcare services (InfoTrak, 2025). On the other hand, Makueni County has also made considerable strides in bridging the digital divide by promoting youth-led digital services like the Makueni Technology and Innovation Hub, which aims at digital empowerment among young entrepreneurs, equipping them with digitization skills and knowledge, facilitating better service delivery and economic growth in the county (Wambua, 2016). Nevertheless, despite these efforts, most counties are grappling with barriers impeding the successful adoption of digital infrastructure, such as budget constraints, corruption, mismanagement of funds, digital illiteracy, and the widening digital divide (Oribi, 2020).

1.1.1 Service Delivery in County Governments in Kenya

Kenya overwhelmingly ushered in the current constitution that advocates for the promise of devolution, which resulted in enhanced grassroots access to political power and natural resources (Kalava, 2016). Automatically, this increased the public's expectations of high county government performance and service delivery. While most devolved units tend to appreciate this fact and strive to capitalize on the available resources to deliver services to the public, others have been stuck in the nascent phases of laying the groundwork and planning for delivery, ultimately resulting in poor or delayed service delivery (Kamau, 2022). Irrespective of this, what remains crucial is that the public feels the impact of devolution and requires constant service delivery, highlighting the need for county governments to fully decipher the needs of their residents and implement plans that are concomitant with their expectations (Kipkirui, 2020).

The County Public Service is essential in actualizing the vision of devolution into real-life or tangible benefits to the public (Musiega et al., 2023). Devolved units are tasked with planning, coordinating, and implementing 14 devolved services, such as healthcare services, local tourism, agriculture, trade development, air pollution control, roads, transport, education, and county planning, among others (County Government, 2023). The counties' dedication, commitment, and expertise in driving the agenda of service provision and inclusive growth improve the quality of life for all Kenyans (Kipkirui, 2020). Nonetheless, it has not been an easy journey, as many counties often experience complex issues.

According to Kamau (2022), most counties encounter challenges like political manipulation, heightened corruption cases, lack of transparency and accountability, poor human resource policies, poor planning, poor evaluation practices, minimal citizen participation, and poor digital infrastructure. These factors are common causes of poor service delivery within the devolved units, limiting their performance and delivery of quality, timely, and accessible services to residents (Kalava, 2016; Kamau, 2022; Kipkirui, 2020). For instance, according to a recent report by the Ethics and Anti-Corruption Commission, the country's average bribe doubled in the recent year, with over 13.2%, with counties such as Nairobi, Busia, and Kiambu in the lead (Ethics and Anti-Corruption Commission, 2023). Another study revealed that over 80.5% of citizens across different counties cited that misappropriation of revenue by county government officials was a significant aspect affecting service delivery (Muchiri, 2023). In addition, inadequate resource

allocation and funding, especially within the health and education systems in counties, have increased in the past few years, impeding quality service delivery (Sifuna & Obonyo, 2019). Therefore, despite the rigorous efforts to enhance service delivery, many counties continue to grapple with significant challenges impeding quality, timeliness, and effective public services.

1.1.2 Murang'a County Government

County Governments in Kenya were formed under the 2010 Constitution to decentralize power, promote development, and improve service delivery across the six regional economic blocs (World Bank, 2023). Every county has its government officials charged with delivering devolved functions like health, transport, infrastructure, agriculture, and education, among others, customized to meet the diverse needs of the residents (Kinyanjui, 2025).

Murang'a County is one of Kenya's forty-seven devolved units within the Mt. Kenya and Aberdares Region Economic Bloc, bordering Kiambu, Nyeri, Kirinyaga, and Embu counties (Murang'a County Government, 2023). Murang'a consists of eight sub-counties, including Mathioya, Kangema, Kigumo, Murang'a South, Kiharu, Maragwa, Gatanga, and Kandara, further grouped into 35 wards for better service delivery (Murang'a County Government, 2023). The recent census shows that the county has a population of over 1,056,640 individuals, almost equally divided between males and females (Murang'a County Government, 2024). For decades, Murang'a County has fallen short of the high expectations bestowed upon the officials by the residents. Several audit reports and annual financial statements have criticized the country for poor service delivery, calling the leaders to assess and mitigate the root causes of this issue (Kinyanjui, 2025; Mathenge, Shavulimo, & Kiama, 2018).

Despite being ranked as the best-performing county in a recent report done by InfoTrack (2025), the county still has loopholes and issues impeding efficient service delivery. For instance, a recent report by KIPPRA (2024) pointed out the inadequacy of digital infrastructure due to limited access to reliable internet services, particularly in rural areas, resistance to adapt to new technologies, poor ICT infrastructure, and constant power outages slowing down automated service delivery. Similar to other countries, Murang'a struggled with heightened corruption cases and bureaucratic loopholes that led to the mismanagement of resources and complications of service delivery, limiting the accessibility of government services (Kinyanjui, 2025; Mathenge, Shavulimo, & Kiama, 2018). Such prevalent challenges continue to hinder quality, timely, and effective service

execution among residents in the region, accentuating the need for this study to identify how digital transformation strategies can be leveraged to mitigate such issues, enhancing better service delivery.

1.2 Statement of the Problem

Ideally, with the latest digital transformation initiatives, Murang'a County is anticipated to have efficient service delivery in diverse sectors (Kamau, 2022). Ideally, the county should contribute to the country's GDP higher than the current contributions, targeting at least 5-7% of the country's GDP (InfoTrak, 2025). However, data from the International Budget Partnership (2023) shows that Murang'a County contributes an average of 2.6% to Kenya's GDP annually, currently at 267,063 million Kenyan Shillings. In addition, a recent report by the County Revenue Allocation (CRA) showed that the county had an approved budget of Ksh. 9.8 billion, whereby sh. 1.5 billion was the revenue target (County Revenue Allocation, 2023). In the same report, CRA indicated that the county's revenue amounted to sh 1.58 billion (County Revenue Allocation, 2023). According to Murang'a County Government (2023), these financial deviations resulted from the loss of revenue streams such as parking and business licenses attributed to service delivery hitches.

In Kenya, a report by the International Budget Partnership (2023) indicates that Murang'a County continues to face various challenges impeding its service delivery despite being ranked the top most performing county in 2025. A recent Infotrak report shows that service delivery hitches or delays were caused by 56% of cases of insufficient ICT infrastructure, 32% of manual and outdated practices across the eight sub-counties, 78% of cases of corruption among government officials, and 7% interference from the National Government (Infotrak, 2025; Oribu, 2020). A report by the Ethics and Anti-Corruption Commission pointed out issues such as lack of accountability, mismanagement of resources, and corruption cases among Murang'a County's government officials (Ethics and Anti-Corruption Commission, 2023). From another perspective, Murang'a County has limited network coverage and unreliable internet connectivity, with about 12.7% of the population (Murang'a County Government, 2023; Kippra, 2024). The county also experiences 64% power outages, and only about 29% of the county's residents are digitally literate (Wambugu, 2016). These challenges interfere with the county's public service delivery, resulting in delayed, inaccessible, and low-quality delivery of essential services like healthcare, education, and infrastructure (Oribu, 2020).

Despite the numerous studies exploring the role of digitalized transformation services on service delivery, studies such as Erii (2024), Sirite, Ongori, & Bosire (2017), and Zeng et al. (2022) explore this topic in other counties like Nairobi, Kiambu, and Taita Taveta, leaving out Murang'a County. This presents a geographical gap addressed in this project. In addition, studies by Onyoni and Kavale (2018) and Muchiri (2023) assessed different variables of digital transformation strategies and service delivery measures, including e-government services and citizens' engagement and performance measures. This leaves contextual gaps that this study addressed by focusing on diverse variables associated with digital innovations and service delivery in local governance. In addition, even though some explore the role of digitization in enhancing counties' services, they employ similar research methodologies, such as case studies and survey research design (Wambugu, 2016; Zeng et al., 2022). Therefore, this scholarly piece addressed geographical, contextual, methodological, and empirical gaps to determine how specific digital transformation strategies influence service delivery, focusing solely on Murang'a County.

1.3. Purpose of the Study

This study aimed to assess the role of digital transformation strategies on the service delivery of County Governments in Kenya, particularly concentrating on the Murang'a County Government.

1.3.1 Objectives of the Study

The following objectives informed the study:

i. To assess the effects of E-government services on service delivery in Murang'a County, Kenya.
ii. To determine the effects of digital inclusion strategies on service delivery of Murang'a County Government.
iii. To analyze the influence of digital empowerment strategies on service delivery by the Murang'a County government.
iv. To establish the influence of digital security and resilience measures on service delivery in Murang'a County Government.

1.4 Research Hypotheses

The following null hypotheses were tested:

H_{01}: E-government services have no significant influence on the service delivery of the Murang'a

County Government.

H_{02}: Digital inclusion has no significant influence on the service delivery of the Murang'a County Government.

H_{03}: Digital empowerment has no significant influence on the service delivery of the Murang'a County Government.

H_{04}: Digital security and resilience have no significant influence on the service delivery of the Murang'a County Government.

1.5 Rationale of the Study

The primary goal of this project was to determine the influence of digital transformation strategies on the service delivery of county governments, concentrating on Murang'a County. While many studies have covered the role of digital innovations and ICT infrastructures in the near past, especially following the emphasis on devolution, there remains a dearth of digital transformation initiatives with specific attention to counties within the Mt. Kenya and Aberdares Region Economic Block like Murang'a. Murang'a County is a key commercial and agricultural hub located within the Central region of Kenya (Murang'a County Government, 2024). It has a growing economy with substantial contributions from agribusiness and dairy farming, which propels the county to higher levels (Muchiri, 2023). Thus, this forms the justification for this study, given the contribution of digital transformation strategies in fostering service delivery by supporting these sectors through better resource allocation, enhanced efficiency, trade facilitation, and better licensing.

Recently, county governments, including Murang'a County, have struggled to deliver efficient, timely, and quality services to the public, resulting in underperformance (Kamau, 2022; Muwonge et al., 2022). The recent reports by InfoTrak Research provide an overview of county governments' performance against a set of key performance indicators such as education, health, sanitation, agriculture, roads and transport, energy, water management, trade and tourism, housing and lands, as well as county planning and development (InfoTrak, 2025). Many counties continue lagging in delivering essential services, with most performing below 50%, indicating the need to assess how digital transformation strategies can contribute to better service delivery (Kenya National Bureau of Statistics, 2023). This is often due to limited ICT infrastructure, particularly in remote areas, bureaucratic inefficiencies, resistance to technology adoption, and the digital divide hindering the

implementation of digital transformation initiatives (Idzi & Gomes, 2022; Muwonge et al., 2022; Wadesango et al., 2018). Even though counties like Murang'a, Homabay, and Kakamega were among the leading counties providing health, agriculture, and education services, there is a paucity of empirical research showcasing the efforts made to digitize services (InfoTrak, 2025). Kinyanjui, 2025). With this in mind, this research provided a perfect opportunity to assess what digital innovations are working and the challenges, and recommend evidence-based improvements that are needed to facilitate better digital transformation strategies to improve service delivery, specifically in Murang'a County. Moreover, Murang'a County is home to rural and urban populations, making it more suitable to understand how digital transformation strategies are being leveraged in diverse settings (Kipkirui, 2020). The findings may guide similar counties across Kenya in evaluating their digital transformation efforts, guaranteeing better service delivery.

1.6 Significance of the Study

Given that digital transformation strategies involve the implementation of different IT infrastructures, it implies the involvement of multiple stakeholders, including county government officials, local citizens, staff, policymakers, and so forth. Generally, this study is expected to enhance these stakeholders' knowledge of current challenges in digital innovations and provide evidence-based recommendations they can employ to ensure better service delivery.

The study's outcomes may offer comprehensive information on the existing knowledge of digitalization in Kenya's county governments. This additional knowledge may be instrumental to policymakers as it may share crucial information on existing gaps or challenges that hinder digital transformation strategies in service delivery. With this information, policymakers can develop and adopt practical policies to revolutionize digitalization practices within county governments that foster improved service delivery.

This study may also help county government officials from Murang'a and other counties with similar digital infrastructure. The results will likely offer invaluable insights into how county government officials can foster effectiveness, accountability, and transparency in service execution, raising overall standards.

The study may also benefit local residents of Murang'a by highlighting a comprehensive overview of the county's provisions and how they can easily access and leverage them. This may ultimately improve service delivery, increasing the accessibility of pertinent products and services across

different populations. Besides, better service delivery in education, healthcare, water supply, and infrastructure sectors promote living standards for Murang'a citizens. Moreover, the findings may prompt greater public engagement and participation in digital infrastructures such as empowerment and inclusion programs.

Lastly, scholars and academicians may also benefit from the findings as the study contributes to the limited knowledge of digital strategies' role in service execution. Since the study addressed particular research gaps, scholars can benefit from this as they can either perfect this study, conduct a study within this field, or identify and refine gaps within this study in future studies. Therefore, the exchange of studies and novel ideals is expected to push academic progress to greater heights, promoting a deeper understanding of leveraging digital strategies to improve service delivery.

1.7 Scope of the Study

The research explored the role of various digital transformation strategies on service delivery in county governments in Kenya, mainly concentrating on Murang'a County. Specifically, the study assessed variables like E-government services, digital inclusion, digital empowerment, and digital security and resilience, exploring how they influence service delivery within Murang'a County. These variables were anchored by common theories, including the Technological Acceptance Model, Theory of Change, and Diffusion Innovation, which inform the dependent constructs, and the resource-based view theory, which informs the dependent construct. A descriptive research approach was used, with data elicited from questionnaires as the data-gathering tool. The study's target population comprised 88 respondents from Murang'a County, including individuals from the county executive committee, ICT County Assembly Committee, ICT staff, departmental heads, employees within different departments, and residents of Murang'a County per ward. The study was done from January 2020 to June 2025, relying predominantly on questionnaires as the primary data source. This guaranteed ample data gathering, analysis, and interpretation time to make accurate and comprehensive inferences.

1.8 Study Limitations

The study is anticipated to encounter various challenges that may interfere with the depth and comprehensiveness of the findings. For instance, some county government officials are expected to hesitate to fill in the questionnaires, given the topic's sensitivity. Some may fear giving honest opinions and criticism for fear of the consequences, whereas others may politicize this exercise.

However, this challenge was countered by the presentation of an introductory letter showcasing the research's primary objectives from the respective university. Besides, one of the employees from the county helped distribute the research tools, which encouraged trust and motivated other employees to provide sincere answers. Some respondents, such as local citizens, were also expected to have challenges reading and interpreting the questions accordingly. This would result in ambiguity and incompleteness of some questionnaires. To counter this issue, the researcher dedicated time to vividly interpret and explain some questions to those who reached out, guaranteeing the completeness of the research tools.

During data collection, it was anticipated that the researcher would face unpredictable climatic issues given that most parts of Murang'a County are in remote areas, making it difficult to access. In addition, some respondents may show hesitancy for fear that the information could be used against them. However, the researcher handled this by guaranteeing discretion and that they would not disclose their names or personal details anywhere within the research tools. The researcher also anticipated the limitations of the unique political, cultural, and socio-economic features of Murang'a County, which may differ from other areas. To mitigate this challenge, the study adopted an inclusive approach, incorporating data from county governments with comparable cultural, political, and socioeconomic characteristics to generalize the results while still acknowledging the uniqueness of Murang'a County.

1.9 Delimitation

One of the primary delimiting aspects that may affect this study is that it was solely conducted in Murang'a, particularly among the county's government officials and local citizens. This suggests that digital transformation factors that may influence service delivery in Murang'a may not be the same in other counties, making the findings harder to generalize.

1.10 Assumptions of the Study

The research was centered on multiple postulations. Firstly, it was presumed that the findings gathered in Murang'a County would be applicable and relevant to other areas outside this region. This could not be the case since counties nationwide have incorporated different digital transformation strategies that may not align with the ones in this study. Besides, the time of integration of ICT applications may differ between Murang'a and other parts of the country, making the study hard to generalize. The second assumption was that the survey may assume that

questionnaires, the primary data collection tool, may be the best data gathering instrument. However, the research overlooks the fact that this data collection instrument may have biased responses, negatively implicating the preciseness of the outcomes.

1.11 Operational Definition of Key Term

Service Delivery: This describes the process through which necessary services are made available and accessible to the citizens, which include essential services like education, water, healthcare, transportation, security, and sanitation (Latupeirissa et al., 2024). In this study, service delivery was measured by public satisfaction, quality, and accessibility of services.

E-Government This pertains to using digital technologies within the public realm to foster effectiveness, accountability, and efficiency, transforming its overall actions in providing essential services to the public (Larsson & Teigland, 2019).

ICT Infrastructure This includes digital platforms such as hardware, strategies, software, and systems that integrate communication technologies when providing services to the public (Osborne et al., 2022).

Public Satisfaction: This is one of the metrics used to measure service delivery in this study. It expresses the level of approval and contentment the citizens have for the services provided by Murang'a County.

Service Quality: This refers to the standard of services Murang'a County provides, measured against public expectations and benchmarking from other county governments.

Digital Inclusion This involves strategies to facilitate equitable, safe, and meaningful access to use, design, and leverage digital technologies and services to increase growth opportunities for everyone in different geographical locations (Sarwar et al., 2023).

Digital Divide: This entails the gap between those who benefit from information and communications technology and those who have no access or do not

benefit from it (Kitsios, Kamariotou, & Mavromatis, 2023).

Digital empowerment: This entails the use of digital technologies and innovations to give individuals and local communities access to tools, resources, and knowledge that help them attain their objectives and improve their quality of life (Mergel et al., 2018).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section describes the literature review, which consists of studies similar to the research topic. It reviews key theories informing the dependent and independent, showing their connections. This was followed by comprehensive empirical research on existing studies that elaborate on the study's variables. This was employed to compare the findings, methodologies, and research gaps this study addressed. A critical review of the research gaps, a visual representation of the conceptual framework, and a chapter review will be included.

2.1 Theoretical Review

A theoretical analysis describes the main theories that elaborate and question a researcher's understanding of the existing information on a given topic (Ugwu et al., 2024). It acts as a building block to explore theories related to the study's variables, enabling researchers to apply them in real-life scenarios. This study was anchored by four key theories: the technology acceptance model, the overriding theory, the theory of change, and the diffusion of innovation to guide the independent variables. The resource-based view theory also informed the dependent variable.

2.1.1 Technical Acceptance Model

Fred Davis developed this theory in 1986, which refers to a system that shows how users come to accept and employ a particular technology (Adiyarta et al., 2018; Singh et al., 2020). Al-Emran, Mezhuyev, and Kamaludin (2018) state that TAM explores the behavioural intention, general impression, attitude, and factors influencing users during different stages to reach the end-point, which is the actual use of specific technology. As denoted by Granić and Marangunić (2019), the model postulates that when individuals are introduced to a novel technology, many factors affect their decision, shaping their perception of when and how they will use it. Granić and Marangunić (2019) mention the key factors influencing users' decisions, including perceived benefits. Another study by Rahimi et al. (2018) defines usefulness as how an individual believes that employing a particular system would increase efficiency. Conversely, the perceived ease of use entails how individuals believe that a specific technological system would be free from effort, implying that if individuals perceive the technology system as complicated, they would have a negative attitude

towards it, resulting in resistance and delays in use (Singh et al., 2020).

TAM is the overriding theory that informs all independent variables. The theory anchors e-government services as a digital transformation strategy in county governments as it addresses the significant factors influencing or shaping citizens' and government officials' adoption of the services (Granić & Marangunić, 2019). By leveraging one of the theory's key characteristics, perceived usefulness, county governments can be able to decipher the best e-government services to implement and demonstrate the benefits and usefulness in contrast with the existing systems (Adiyarta et al., 2018). For instance, county governments should demonstrate how adopting electronic health records in healthcare and online portals for business or land registration fosters transparency, reduces bureaucracy, improves responsiveness, and minimizes delays common with manual programs (Granić & Marangunić, 2019); Singh et al., 2020). By employing TAM theory, county governments can develop accessible, efficient, citizen-centric digital transformation services that foster service delivery.

The Technology Acceptance Model is also suitable for this study as it guides the variable of digital inclusion since the theory focuses on addressing people's perspectives and attitudes that shape their decisions about adopting digital innovations (Scherer, Siddiq, & Tondeur, 2019). Fox and Connolly (2018) mention that digital inclusion guarantees that all citizens, including underserved and marginalized populations, have access to quality and equal services. The technological acceptance model fosters digital inclusion as it enables governments to tailor e-government services as well as other digital transformation platforms to meet the diverse needs of all demographics, including youths, senior citizens, low-income households, and various occupations (Al-Emran, Mezhuyev, & Kamaludin, 2018; Rahimi et al., 2018). With the notion of promoting perceived usefulness, the theory can be used to demonstrate how digital transformation services minimize in-person visits from those in remote areas, save time, reduce expenses, and improve transparency (Adiyarta et al., 2018). This increases public trust and encourages county governments to adopt new digital transformation services more efficiently. Additionally, through the notion of perceived benefits, the theory can be used to create user-friendly digital platforms that are multilingual, simple to use, and accessible to all individuals, irrespective of their literacy levels (Fox & Connolly, 2018). This enhances digital inclusion in providing fundamental services to all populations within a local government.

The TAM theory also informs the variable of digital empowerment as the theory focuses on

understanding users' perceptions and behaviors before implementing new technology. County governments can leverage this theory to enhance digital empowerment, especially among vulnerable and underused populations, by building positive perceptions and attitudes toward adoption (Scherer, Siddiq, & Tondeur, 2019). As suggested by Rahimi et al. (2018), county governments can educate the public on the benefits of incorporating new digital government services in awareness campaigns, which build the public's trust, encouraging them to embrace the new systems promptly. The theory also advocates for digital literacy programs whereby county governments can train county staff and citizens on effectively using multiple digital platforms and services, fostering better service delivery (Al-Emran, Mezhuyev, & Kamaludin, 2018).

The technological acceptance model also anchors the variable of digital security and resilience. According to Granić and Marangunić (2019), TAM's key components are vital in determining the integration and adoption of digital resilience and cybersecurity measures as they influence how county government officials perceive and seamlessly integrate new digital security practices into existing systems and their operations (Rahimi et al., 2018). As suggested by Fox and Connolly (2018), effective implementation of the technological acceptance model can guide local governments to adopt user-friendly, user-friendly cybersecurity measures to reduce resistance to change and adopt new security protocols among government officials and residents. The theory can also be applied to foster a culture of cybersecurity awareness, especially among the staff, ensuring better protection of citizen data and increased service delivery (Al-Emran, Mezhuyev, & Kamaludin, 2018). The theory can also be adopted to establish collaboration and strategic partnerships with cybersecurity agencies within the national government to promote county-level digital security and resilience measures (Fox & Connolly, 2018). By applying the technological acceptance model, local governments can easily and promptly integrate novel digital transformation strategies to promote security measures that are easy to use and beneficial in service delivery.

Despite its relatability and relevance in this study, the technology acceptance model has been widely criticized, leading to several attempts to redefine the theory and its applications. For instance, Fox and Connolly (2018) argue that TAM should not be categorized and defined as a theory as it has questionable heuristic characteristics and limited predictive and explanatory power, which are among the main features of a theory. Similarly, this stance is supported by Scherer, Siddiq, and Tondeur (2019), who suggest that TAM lacks practical value and triviality like other

theories, as it assumes that new technologies are better than existing ones, with no method to prove it. Nonetheless, TAM is pertinent in this study as it profoundly explains the four independent variables of the study and provides relatable insights that county governments can apply to implement new digital transformation strategies, consequently enhancing service delivery.

2.1.2 Diffusion of Innovation Theory

Everett Rogers developed this concept in 1962 and has been used when elaborating on innovations. According to Miller (2018), the theory seeks to elaborate on why, how, and at what rate novel ideas or technologies can be disseminated through a population. Miller (2018) describes the theory as a theory that outlines how novel technological advancements are spread out through cultures and societies from the introduction, development, and widespread adoption phases. The diffusion of theory thereby seeks to explore how different innovations are communicated and integrated into different parts of society and how quickly it is integrated to suit specific needs and preferences (Miller, 2018). The theory is majorly guided by five primary stages, which include awareness of the idea, interest from concerned stakeholders, evaluation, trial phases, and adoption (Amirrudin et al., 2021). These stages are adopted in various sectors to implement new ideas that resonate with the stakeholders and provide solutions to specific needs (Amirrudin et al., 2021).

This theory relates to this research as it informs digital inclusion on the provision of efficient service delivery, particularly in county governments like Murang'a County. According to Dearing and Cox (2018), various groups integrate new ideas at different rates due to different perceptions and attitudes. The groups range from early innovators to late adopters (Dearing & Cox, 2018). This theory can be adopted to promote citizens' participation and inclusivity in government decision-making and service delivery by targeting and influencing early adopters (García-Avilés, 2020). In this case, early adopters involve local government officials and community leaders who should be well-informed and trained on using and optimizing digital infrastructure to enhance service delivery (García-Avilés, 2020). This enables a broader and quicker reach to individuals who barely access or know the updated digital infrastructure systems within local governments (García-Avilés, 2020).

The theory also informs digital inclusion as it emphasizes reducing barriers that impede the adoption of new ideas through strategies like creating awareness and regular training for the right stakeholders (Dearing & Cox, 2018). Among the significant hindrances to digital inclusion in most countries within the Kenyan government are digital illiteracy and the widening digital divide

(García-Avilés, 2020). This theory, therefore, underscores the role of providing training and increasing awareness, which might involve developing accessible and multilingual online platforms, subsidizing internet access, and increasing training opportunities for residents and government officials on leveraging digital infrastructure to enhance service delivery (Dearing & Cox, 2018).

The theory also anchors the variable of e-government services to guarantee successful adoption, fostering better service delivery and citizen engagement. According to Miller (2018), the theory exemplifies how emerging technologies can be adopted and spread across societies. Thereby, using the five main guidelines of the theory, including complexity, trialability, observability, compatibility, and relative advantage, the theory may guide the prioritization of the e-government services to be adopted in local county governments (García-Avilés, 2020; Miller, 2018). The theory raises the questions of why, which, and how e-government services are better than conventional public delivery services, which ones fit with the existing systems and residents' needs, how easy they are to use, and observable benefits in service delivery (García-Avilés, 2020). With this information, county government officials can have a vivid sense of direction on which government services to use and leverage and when to meet citizens' needs and deliver exemplary service delivery (Dearing & Cox, 2018).

2.1.3 Theory of Change (ToC)

Proposed by Weiss in 1995, the theory provides an overview of why and how a desired intervention is anticipated and impacts in a specific context (Weiner, 2020). Reinholz and Andrews (2020) state that the theory explicitly details how a program, initiative, or intervention leads to specific impacts or outcomes. Henceforth, the theory outlines a structured strategy for planning, integrating, and monitoring changes within a system to attain long-term desirable outcomes (Weiner, 2020). In the context of national and local government, ToC has been imperative in enabling governments to design and adopt practical policies that result in sustainable and meaningful transformations in the delivery of essential services (Rosenau, 2018).

Theory of Change is imperative in this study as it informs one of the independent variables, digital empowerment. As mentioned by Rosenau (2018), governments can apply ToC in implementing digital empowerment initiatives through systematically planning, adopting, and evaluating digital initiatives at every step, ensuring enhanced service delivery. Weiner (2020) outlines that the first step in using ToC entails clearly defining the existing problem and identifying the desired impacts.

When integrating digital empowerment strategies, county governments can first assess existing service delivery systems and their challenges, including inefficiency, corruption, and unreliable ICT infrastructure, evaluate their impacts, and identify desired impacts (Rosenau, 2018). For instance, when a government struggles with the slow processing of land or business permits due to dysfunctional ICT systems, the theory of change may guide the planning and adoption of a reliable digital permit issuance system to foster bureaucracy. After implementing the new digital empowerment strategies, the theory of change can also be used to evaluate and measure progress, ensuring each strategy addresses a specific need and contributes to desired outcomes, which is better public service delivery (Reinholz & Andrews, 2020).

Theory of Change is also pertinent in this study as it informs the variable of digital security and resilience measures in enhancing public service delivery (Reinholz & Andrews, 2020). With the increase in cybersecurity risks like ransomware, system vulnerabilities, and data breaches, the theory can be used in various strategies to protect public services (Werner, 2020). Irungu (2019) recommends planning and implementing proactive and layered security measures in data protection, such as firewalls, intrusion detection technologies, and anti-malware solutions, and constantly evaluating their functionality in protecting government transactions and services. Besides, the theory of change can be used to endorse cybersecurity training and awareness among residents and government staff by outlining the current and desired outcomes of cybersecurity practices (Majchrzak, Markus, & Wareham, 2016). ToC can also be applied to develop structured, measurable, and transparent anti-corruption policies by defining the major corruption issues in county governments, assessing their impacts, and long-term goals (Majchrzak, Markus, & Wareham, 2016). With this information, government officials can identify key resources and stakeholders required to successfully implement digital security and resilience measures, such as anti-corruption commissions, whistleblower protection, investigation units, citizen reporting channels, and audit officers (Majchrzak, Markus, & Wareham, 2016).

2.1.4 Resource-based View Theory (RBV)

Edith Penrose presented the theory in 1959 to elaborate on service delivery using the available resources within an organization to enhance competitive advantage and improve overall performance (Gupta et al., 2018). The theory postulates that all entities aim to maintain a competitive advantage over their rivals, which can be achieved by delivering high-quality and unique consumer services (Vasudevan, 2021). Proponents of this theory provide an in-depth

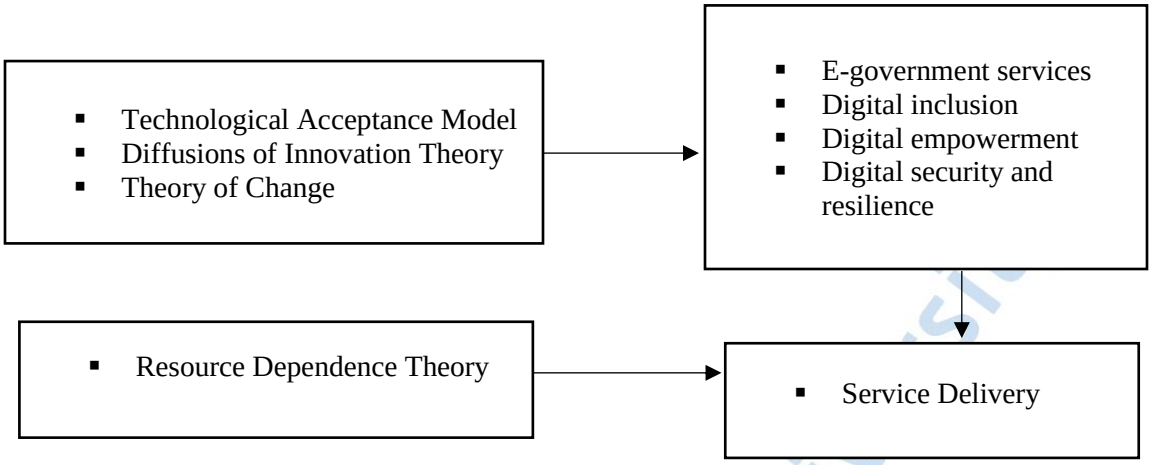
understanding of which resources an institution should embrace to enhance its competitive edge over its rivals (Gupta et al., 2018; Zvarimwa & Zimuto, 2022). The Resource-based view theory sheds light on how private and public organizations can leverage available resources to maintain their competitive edge while still delivering exemplary services to the intended audience.

In this research, RBV informs the dependent variable, the service delivery in Murang'a County. Resource-based view theory emphasizes using VRIN resources to promote service quality in key public sectors. According to Gupta et al. (2018), county governments can optimize resources such as digital technologies to revamp the agricultural sector with initiatives such as data analytics and mobile apps to provide marketing linkages and tips for farmers, provision of capabilities initiatives that foster training in modern farming methods, promotion of sustainable farming techniques (Zvarimwa & Zimuto, 2022). On the other hand, leveraging rare and valuable resources such as skilled personnel and innovations in the medical infrastructure within a county can result in enhanced healthcare services. For instance, leveraging digital infrastructure such as telemedicine or digital health systems can improve healthcare service delivery (Wang & Si, 2024). Conversely, optimizing human resources, such as recruiting and training healthcare professionals on new technologies, as well as conducting public health awareness programs, can be integral in delivering better healthcare services (Vasudevan, 2021).

County Governments can also adopt the resource-based view theory to enhance the delivery of infrastructure services to residents. By optimizing available unique and rare resources such as financial resources, strategic partnerships, and human resource expertise, local county governments can deliver improved services in terms of better roads, housing, and water and sanitation (Vasudevan, 2021). Since the resource-based view theory aims at optimizing only the non-substitutable, rare, valuable, and imperfectly imitable resources, the theory informs the aspect of service delivery since optimizing VRIN resources results in a sustainable competitive edge and provides timely, quality, and accessible service delivery (Vasudevan, 2021). Therefore, the theory's underlying assumption is that an organization's unique resources are highly valuable, rare, and hard to replicate by competitors, which enhances service delivery and consumer satisfaction.

Figure 1

Theoretical Framework



Source: Researcher (2025)

2.2 Empirical Review

2.2.1 E-Government Services and Service Delivery

E-government entails using digital technologies and innovations to offer government services to businesses, citizens, and government agencies (Ronoh, 2021). The major objective of e-government service is to bolster efficiency, transparency, and accessibility in public services, especially within county-level governments (Wahid et al., 2024). E-government services in Kenya vary in different sectors, including health services, digital land management platforms, business registrations, and digital revenue collection platforms (Ngetich & Migosi, 2023; Wambua, 2017). According to County Government (2023), county governments, including Murang'a and Nairobi, have adopted the Ardhisasa initiative, which is Kenya's online land management system developed by the Ministry of Lands to oversee digital land transactions such as transfers, online payments, and title searches.

A study by Wambua (2017) assessed the role of land data systems in the devolved units across Kenya. Using grounded theory, the study was conducted in 47 devolved units, whereby 325 participants were chosen through convenience sampling. Information was gathered through surveys and interviews with the participants and later analyzed through descriptive and inferential statistics. According to the findings, e-government services involving land information management systems contributed towards land tenure security, access to credit, dispute resolution,

and real estate markets. The study recommends establishing land information management systems for effectively managing and storing land records, dispute resolution, and better integration of land information across counties.

A recent study by Chitika and Yeom (2024) explores the influence of e-government in Nakuru and Machakos counties as a strategy for sustainable development and enhanced public services in Kenya's devolved units. The research employed a case study method and content analysis to contrast insights into the two counties. Key documents like official government publications, academic articles, policy papers, and strategic plans from government websites and academic databases were used. The findings denoted that both counties were in the emergence phase, slowly heading towards a better service delivery stage of sustainability and maturity. According to the authors, this growth is primarily influenced by adopting new electronic technologies for transactional and interactive services to enable citizens to conduct activities like permit applications and bill payments online. Nonetheless, Machakos County showed higher ICT infrastructure and user engagement; however, it still faced issues like low digital literacy among the residents. The authors recommend formulating robust ICT policies that enhance county-level e-government services for better service delivery.

Kurfalı et al. (2017) examined factors contributing to citizens' decisions to employ e-government amenities in the Turkish Government. Using the Technological Acceptance Model, the research used a survey research technique. 529 respondents were selected from different regions of the nation via purposive sampling, and the answers were investigated using the Structural Equation Modeling method. According to the results, social effect, internet awareness, internet drivers, and performance expectancy positively impact the client's perception of using government services. These findings are relevant to this study as they highlight the need to popularize and improve e-government services by prioritizing the citizens' needs and priorities when designing e-government services.

Mberi et al. (2017) investigated the influence of e-government and service delivery within Taita Taveta County in Kenya. Using key theories such as the theory of change, expectancy-disconfirmation theory, efficiency theory, and diffusion of innovation theory, the research used a correlational technique to assess the effects of e-government in different sectors within the county. 118 employees of Taita Taveta County were the target population, whereby the Yamane formula

was utilized to narrow down the sample size to 92 respondents. Using questionnaires in the form of Likert scales, the study retrieved relevant data, which was analyzed through Microsoft Excel, SPSS, correlation, and regression analysis. According to the results, electronic government, electronic business, electronic citizens, and employees significantly affect the county's service delivery. The study recommended that e-government services ought to be designed with the needs of the users or citizens in mind. Making it more user-friendly encourages citizens from different backgrounds and diverse characteristics to use and leverage e-government services. The study is significant in this research as it outlines strategies county governments can use to enhance citizens' e-government adoption, including providing online training programs to employees and holding awareness campaigns via various media platforms.

Wairiuko, Nyonje, and Omulo (2018) investigated the role of information technology infrastructure and the integration of the e-government in providing better services in Kajiado County, Kenya. Using a pragmatic paradigm research philosophy and a descriptive survey design, the study used the Cochran formula to choose 335 participants from 2660 staff from various departments in the county. The data was retrieved via open and closed-ended questionnaires and an interview guide for qualitative data. Correlation analysis and regression model were employed to decipher inferential information and test the study's hypotheses. The study revealed that ICT infrastructure substantially affected the integration of e-government ammenities in the Kajiado County Government. The authors recommend that county governments across Kenya should develop digital innovations and ICT policies to address challenges like lack of infrastructure, power disruptions, and slow networks. Additionally, the authors recommended that Kajiado County invest more in reliable internet and network services and choose service providers based on their ability to deliver reliable services and their infrastructure. The study contributes to this study as it stresses the role of effective ICT infrastructure in County Governments across Kenya to ensure better service delivery in different ministries.

2.2.2 Digital Inclusion and Service Delivery

As described by Maina and Otieno (2024), digital inclusion entails a strategy or process that ensures everyone in a community, especially those in remote areas or marginalized communities, can access and optimize digital technologies like other populations. Anguche et al. (2024) state that digital inclusion entails promoting internet access and digital literacy training to remote and

underserved populations, fostering equal opportunities. In Kenya's devolved units, digital inclusion is paramount as it supports access to diverse e-government ammenities for all populations, enhancing efficiency and public service delivery (Wambua, 2016). For instance, e-government programs in counties like Nairobi, Kiambu, and Taita Taveta have positively impacted efficient and effective service delivery with services such as e-business licensing and e-parking (Anguche et al., 2024). Despite these transformations, many county governments still struggle with the digital divide, given that digital transformation programs often exacerbate societal inequalities, leaving behind vulnerable populations with limited access to the initiatives or those who struggle to navigate digital technologies (Mberi et al., 2017). As a result, these challenges widen the digital divide in communities, significantly affecting public service execution in the devolved units in Kenya.

Irungu (2019) assessed the success of e-participation systems in influencing citizens' decision-making in Murang'a County. With the advent of new technologies every day, the study assessed how social media and e-participation systems enhance e-participation levels in service delivery from the user's perspective. The research employed a quantitative technique and retrieved data from self-administered questionnaires from 656 residents across Murang'a County. The study's outcomes suggested that the county's e-participation system was successful despite users' prevalent daily challenges. According to the results, most residents had trouble accessing e-government services because of a lack of awareness and inadequate digital mastery skills. The study, therefore, recommends enhancing digital literacy and awareness programs to improve service accessibility and usage of government services in county governments.

In a study by Ankrah and Abah (2020), the authors investigated the use and impacts of ICT centers for Digital Inclusion in Ghanaian local communities, focusing on municipal and regional governments. The authors' primary objective was to bridge the increasing digital divide gap and foster digital inclusion for all individuals, especially marginalized communities in Asawasi and Adukrom communities within the Kumasi Metropolis Region in Ghana. A target population of residents and managers in Asawasi and Adukrom community centers was recruited using the quantitative survey research method. The convenience sampling approach was used to sample 898 residents from 47,261 population. The finding denoted that all respondents from the two centers knew about ICT centers through social media platforms and friends. Nonetheless, only 57% and 20.9% of the population used ICT infrastructures for various reasons, including entertainment

purposes and the availability of e-government amenities. This was mainly attributed to inadequate computers, frequent power outages, and poor computer skills among the population. The study recommended further research to establish viable solutions and policies to overcome these issues. A study by Chohan and Hu (2022) explored the impacts of solidifying digital inclusion to facilitate e-government services through cohesive information technology training initiatives to increase digital capability. The quasi-experimental study used a pragmatic research philosophy to test the control group. The sample group encompassed 438 citizens selected through purposive sampling. The citizens or chosen trainees have little or no ICT skills and minimal experience with ICT infrastructure. Data was analyzed via statistical techniques like a t-test to regulate the mean difference between the control and treatment groups. The findings revealed that e-government training initiatives significantly increased the self-efficacy of government workers and trainees when using e-government infrastructures. This reiterated the need for e-government ICT training initiatives for citizens and officials to improve digital literacy and lessen the digital divide. As a result, these programs would enrich citing potential and foster more equitable access to public services in underserved populations.

A study by Mumporeze and Prieler (2017) explored how the gender digital gap affected Rwanda's governance and service delivery, mainly concentrating on socioeconomic factors that promote the digital divide. Despite the government's efforts to implement digital transformations in service delivery, access to and usage of ICT infrastructure are still problems in the country, especially among the youth and women in Rwanda. The study used a qualitative method and an in-depth survey as the data-gathering tool. Interviews from 654 residents, 64% women, were analyzed through a thematic analysis technique to determine patterns and trends. The outcomes revealed that a gender digital gap exists in Rwanda regardless of the government's initiatives to eradicate this issue. Among the main reasons for the carriers of digital inclusion among women were social, cultural, and economic factors like lack of self-confidence, self-worth, and digital literacy skills. Other factors, like gender roles, computer anxiety, and lack of ICT infrastructure, limit ICT access and usage, impeding the delivery of e-government services. The researcher concluded that Rwandan marginalized populations like women and youths need to be informed better on the use of ICT and new e-government strategies to foster better governance and delivery of essential services.

2.2.3 Digital Empowerment and Service Delivery

Ronoh (2021) defines digital empowerment as the process of equipping citizens with digital skills, tools, and access to new technologies to help them participate or engage effectively in digital government and public service delivery. Ronoh (2021) further mentions that digital empowerment includes access to digital literacy programs, acquisition of digital skills and training programs, and access to government portals and websites. In Kenya, digital training programs have been increasing in local and national level governments. For instance, the recent Ajira Digital Program initiated by the Government of Kenya in counties like Nairobi, Mombasa, Kisumu, Murang'a, and Kakamega targeting youths to equip them with online and digital skills that will help them access fundamental public services and increase employment opportunities in societies (Onsomu et al., 2022). Ultimately, this enables citizens from all walks of life to access and leverage technologies to improve livelihood and enhance public service delivery (Wahid et al., 2024).

Kabwe et al. (2024) assessed the contribution of empowering society at the local level with digital transformation. Using a case study research design of Pemba Town Council in Zambia, the study explored how equipping citizens with digital tools enhances efficient and effective public service delivery at the local government levels. Guided by the Technological Acceptance model, the study used a convenience sampling method to recruit 537 participants from a sampling population of 789. The study collected data via interviews and focus groups, which were analyzed using a regression model. The research uncovered that even though digitalization among the council was hampered by hurdles like the digital divide, infrastructure challenges, digital illiteracy, and inadequate human resources, the local council and residents showcased enthusiasm for digital empowerment programs. The study highlights citizens' need to engage and participate in digitalized platforms to enhance service delivery. This was suggested through awareness campaigns and digital literacy programs to train the council, government officials, and citizens on digital infrastructures.

Another study by Lopes, Sargento, and Farto (2023) assessed the impacts of training workers in the public realm with digital skills to enhance service execution. Given that digital transformation within county governments can be an intricate process when government officials have inadequate skills, digital literacy training is essential for workers in the public field. According to the Human Capital theory, the study investigated which features influenced training prosperity in the county governments' digital fields. Data was retrieved from 573 employees via an online questionnaire

and analyzed statistical techniques. The findings uncovered that 28% of employees with higher levels of training and awareness in digital knowledge and skills delivered exceptional services. On the other hand, 72% of the employees lacked digital skills and training in the digital world in areas like cybersecurity, communication systems, and dataset management. The study recommends providing training programs for government officials and county government workers to familiarize themselves with digital transformation.

Hien (2024) conducted a study investigating how digital empowerment in the public sector within the Vietnamese government fosters citizen satisfaction. With the global shift towards digitalizing government services, the study delves into assessing the public's attitudes and usage of government services. Using a survey method, empirical research was explored on the relationship between public awareness of digitalized services, convenience and accessibility, digital service quality, and service quality and delivery. The findings stress the multi-dimensional aspect of digital transformation, citing the need to promote public engagement, trust, and awareness among residents. The study highlighted that although 48% of the local residents had reliable internet and network connections, only 14% were aware of digitalized e-government services and employed them. This underscored governments' need to enhance awareness and train citizens on accessing digital platforms to enhance service execution.

2.2.4 Digital Security and Resilience, and Service Delivery

With increasing attention to adopting digital solutions in Kenya's national and local governments, digital security and resilience measures are paramount for effective service delivery (Schneider, 2025). Telo (2021) defines digital security as protecting digital networks, systems, and vital data from cyber threats like data breaches, phishing, or hacking. Meanwhile, digital resilience entails the government's ability to withstand and recover from digital disruptions like cyberattacks or data failures (Costa et al., 2019). In Kenya, the interplay between effective service delivery and cybersecurity threats is evident and has critical implications for county governments (Telo, 2021). Cybersecurity measures, policies, and anti-corruption measures prevent cyber disruptions, secure digital systems, and prevent unauthorized access to personal details on e-government platforms like iTax or eCitizen, ensuring efficient service execution (Costa et al., 2019; Telo, 2021).

The increasing digital resilience in government operations has contributed to better service delivery, but simultaneously paved the way for critical cybersecurity issues (Telo, 2021). A study by Schneider (2025) explores the necessity of adopting robust cybersecurity measures in digital

government frameworks to mitigate emerging threats, foster public trust, and maintain exemplary service reliability in European countries. The study utilized a qualitative review of case studies from European countries like Estonia, the Netherlands, and Finland. The methodology involved examining government policies, technological innovations, and public-private partnerships promoting cybersecurity measures. The results revealed that successful digital governments and service delivery adopt cybersecurity strategies and advanced technologies, including blockchain and artificial intelligence, to encourage data protection. The study concluded that national and local government cybersecurity policies are foundational to their success and delivery of outstanding public services. The author recommended continuous investments, public awareness, and collaboration to establish resilient and secure digital ecosystems, ensuring service execution. However, Chisika and Yeom (2024) highlight that this digital transformation has been paralleled by a rise in cybersecurity threats, which are becoming frequent.

Research by Ronoh (2022) investigated the challenges related to cybersecurity adoption in government administration that interfere with service delivery. The study focuses on issues governments encounter during their digitization efforts, specifically data protection, employee training, legal ramifications, and infrastructure vulnerabilities. The study uses case study research and a mixed methodology that reviews current literature, expert interviews, and case studies of recent cyberattacks in government systems in the United Kingdom. Discussions and interviews with cybersecurity experts provided qualitative insights. The study identifies significant risks, including insufficient encryption, human factors, corruption, ineffective response strategies, and inadequate staff understanding. The findings revealed that even though governments have embarked on digitization efforts in administration to deliver fundamental services, they are more susceptible to increasingly sophisticated cyberattacks with the increasing technologies. Therefore, the study recommended implementing layered security policies and frameworks, providing personal training programs, and conducting regular risk assessments to decrease vulnerabilities.

Even though Kenya's devolved units have developed a strategic framework to enhance efficient and effective services, given a huge gap that fails to acknowledge the influence of corruption in limiting service execution. In a study by Mwangi (2024), the author investigated the drivers of corruption of the Kiambu and Nairobi County Governments in Kenya, limiting service execution. The study used the institutional theory, standard theory, and policy network to assess the influence of information processing, bureaucratic procedures, and anti-corruption policies on public service

delivery. The study's sample size was 126, consisting of staff in strategic functions in both counties and public members, including minorities, youth, the disabled, women, and political leaders. Convenience and purposive sampling guided the selection of 2 members of the public from different service delivery departments and 10 public officials who were interviewed. Data computation was scrutinized through thematic analysis. The results uncovered that bureaucratic procedures, organizational culture, and information processing were key drivers to corruption in county governments, affecting the quality and accessibility of public services. The research also denoted that a lack of public cognizance and anti-corruption measures in government frameworks contributed to corruption. The author recommended that counties implement anti-corruption measures and scorecards to overcome corruption hurdles, improving the accessibility and quality of public services.

2.2.5 Service Delivery

According to Huergo and Moreno (2023), service delivery in governments entails provision of essential services to citizens, including healthcare, water supply, infrastructure, public safety, waste management, among others. Digital transformation is key for devolved units to provide essential services to the residents. According to Kimutai and Aluvi (2018), some primary causes of poor service delivery in Kenya's county governments include political manipulation, heightened corrupt cases, lack of transparency and accountability, poor evaluation practices, failure to manage change, and limited citizen participation. These challenges continue to persists causing delayed interfere access to quality services to all populations despite the government's efforts to digitalize all government services (Kimutai & Aluvi, 2018).

Ugwu et al. (2024) explored the impacts of digital governance in East African countries, assessing its diverse implications on public service execution. The study aimed to outline the countries' initiatives at harnessing digital transformational platforms to streamline public service performance and administrative processes. The study used a case study research method exploring existing literature in three East African Countries: Kenya, Tanzania, and Uganda. Secondary data was obtained from 579 documents across different regions in the countries and analyzed via thematic coding. The results indicated that despite the successes of digital governance in public service performance, hurdles like the widening of the digital gap continue to exacerbate existing inequalities in service delivery among vulnerable and marginalized populations. Moreover, cybersecurity threats loom large, with the authors stressing the need to implement robust

frameworks to protect citizens' privacy and uphold ethical usage. The article provides insights in the potential of digital transformation strategies to revolutionize governance practices and public service delivery, enhancing citizen satisfaction.

Latupeirissa et al. (2024) conducted a comprehensive review of digitization strategies in transforming public service execution in Indonesia's local governments. The survey employed a survey strategy to analyze case studies and literature evaluation of digital transformation initiatives in different nations, comparing them to Indonesia. The study employed a Scopus database search strategy to identify relevant literature on digitization in governments. Of 114 publications, 74 were chosen using a systematic approach, obtaining secondary data relevant to the study. The analysis used nations like Indonesia, China, Brazil, Russia, the United Kingdom, Switzerland, and Slovenia to explore digitalization initiatives in their public government sectors. The findings revealed that digital transformational initiatives improved citizen participation, efficiency, and responsibility in service execution. However, the study noted that the government faced prevalent challenges related to digitalization, including corruption and cyberattack threats interfering with service delivery.

Maina and Otieno (2024) explored information security strategies to protect and safeguard e-citizen amenities in Kenya, ensuring efficient and effective public service execution. The case study utilized a descriptive approach with 12,000 users from 51 Huduma Centres across Kenya and 10% of users from each center. A sample size of 966 participants was involved, obtaining datasets from questionnaires. The study was analyzed using qualitative and quantitative techniques, testing the hypotheses at a 5% significance level. The study denoted that most government officers lacked stable institutional policies, firewalls, management security reviews, inadequate staff training, and infrastructure security audits. Additionally, threats such as prevalent service disruptions, information leakage, and corruption cases continue to plague service delivery by slowing down access to and quality service delivery. Therefore, the authors recommend the adoption of effective and practical cybersecurity measures, including regular training, response measures, strategic reviews, and whistleblowing protection to counter cybersecurity and corruption challenges that hinder efficient service delivery.

2.3 Critical Review and Research Gaps

With the advent of technological innovations, digital transformations within governments have become a vital strategy to foster overall performance and increase access to quality service delivery

to the citizens. Various literature has explored the influence of several digital transformation strategies like ICT infrastructure, data-driven decision-making, and e-government services in promoting efficiency and citizen engagement. For instance, Chisika and Yeom (2024) and Wairiuko, Nyonje, and Omulo (2018) discuss the contribution of e-government services in promoting governance in national governments, highlighting how e-platforms like e-citizens in Kenya encourage better service delivery by promoting access and faster response. Nonetheless, this research predominantly focuses on national governments and government bodies like ministries, leaving a contextual gap in comprehending how local county governments can navigate e-government practices to provide diverse services like land and business registrations, e-health services, and digital revenue collections. Even though some studies explore e-government services at the county level, they focus on exploring Kenyan cities like Nairobi County and underexploring counties like Murang'a (Anguche, Kimani, & Ndururi, 2024).

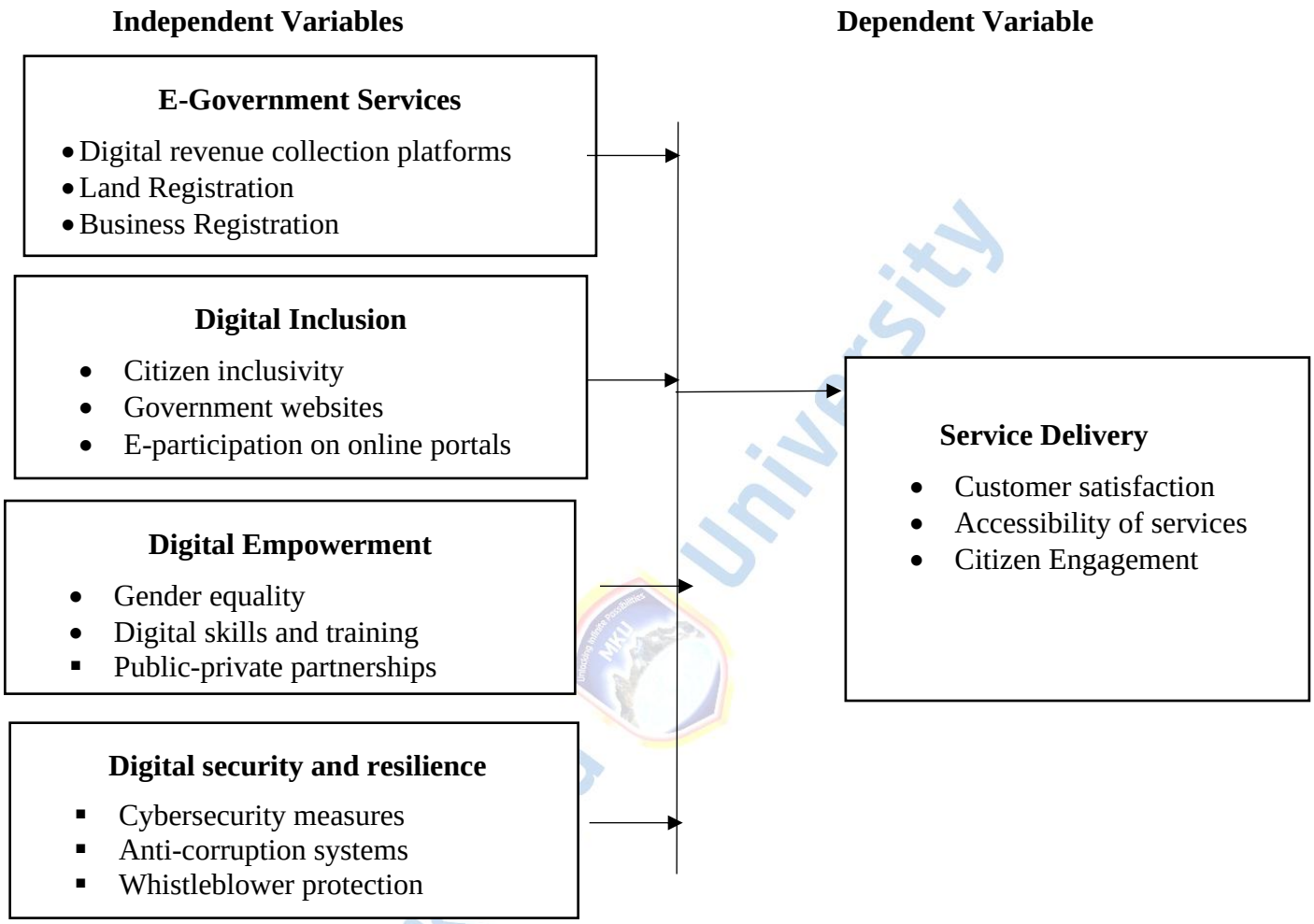
Other scholars, such as Ronoh (2021) and Wahid et al. (2024), stress the influence of digital empowerment strategies in enhancing service execution. They highlight the role of establishing online portals and government websites to promote citizen participation and engagement, resulting in citizens' satisfaction and timely delivery of services. However, the studies fail to address key challenges most county governments encounter that hinder digital empowerment initiatives, including the declining digital divide, digital illiteracy, and unskilled staff training among government officials and residents. Furthermore, studies by Irungu (2019) and Schneider (2025) explore the need to implement digital security and resilience measures as a key digital transformation initiative in governments worldwide, especially in developed countries. While this research provides valuable insights and a theoretical framework for digital security practices, there are minimal practical case studies on county governments in developing countries like Kenya, which face unique cybersecurity and corruption challenges, creating geographical and empirical gaps.

2.4 Conceptual Framework

A conceptual diagram is integral in providing a visual representation or roadmap to assess the research's complex phenomena (Nilsen, Gustafsson, & Blömeke, 2016). The image below depicts the link between this study's independent and dependent constructs.

Figure 2

Conceptual Framework of the Study



Source: Researcher (2025)

2.5 Chapter Summary

This chapter showcases the theoretical review discussing key theories that are pertinent in the study either informing service delivery or the four approaches of digital transformation. The theories are presented in a theoretical framework to show how the dependent and independent variables correlate. This chapter also explores empirical literature that are pertinent to the variables which enables the identification of research gaps. The section finalizes with a vivid conceptual diagram that show the link between the study's paradigms for better understanding.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This section outlines the study's research approach, the main philosophy, and other key details, such as the target population, sampling method, sample size, and the unit of analysis and observation. The chapter outlines the data-gathering tools and analysis procedures that enable the researcher to make coherent inferences. The findings were later presented in tables. Lastly, this chapter points out various ethical considerations the researcher upheld throughout the study.

3.1 Research Philosophy

Using a positivist research philosophy, the study gained factual inferences through data collection materials. In essence, positivist research philosophy relies on quantifiable observations that stem from human experiences, perceptions, and opinions regarding a specific topic that prompt statistical analysis (Park et al., 2020). Park et al. (2020) assert that positivist philosophy is a research paradigm whereby the researcher is autonomous in the study, leaving no room for any bias or conflicts of interest. These reasons make positivist research suitable for this study since it allows for replicability and generalizability of the findings and reduces the possibility of researcher bias.

3.2 Research Design

This study utilized a descriptive research methodology to provide a precise and detailed image of the behaviors and characteristics of the target population. Creswell (2021) mentions that a descriptive research approach helps researchers comprehensively understand a particular issue by obtaining data without inferring cause-and-effect relationships. Therefore, the main objective of this research approach was to offer a precise and thorough picture of the phenomenon or population under study and explain the relationship, trends, and patterns within the gathered data (Telo, 2021).

3.3 Target Population

This study used a census sampling approach to retrieve data from a specific target population within Murang'a County. The study's target population comprised 88 respondents from Murang'a County, including employees and officials from the county executive committee, ICT County Assembly Committee, ICT staff, departmental heads, and employees within different departments

of Murang'a County. The study also included one resident within the 35 electoral wards in Murang'a County. According to Stratton (2021), selecting the right target population is key in a study as it is considered the master blueprint for deducing the sample size. The study, therefore, comprised 88 participants, including Murang'a county government officials, staff, and residents with different duties and responsibilities in service delivery.

3.4 Sample Design

3.4.1 Sample Size

This study used a purposive sampling approach to retrieve data from the target population. Since data was collected via complete enumeration, the sample size was similar to the target population of 88 participants with different duties and responsibilities in the county government. Creswell (2021) describes sample size as the technique of choosing the unit of analysis in research. The sampling technique was more suitable as it reduces the chances of bias, derives accurate and reliable results, and will likely increase confidence (Mujere, 2016). The table below breaks down the sample size used in this project.

Table 1: Sample Size

Categories	Total Number of Participants
County Executive Committee	1
ICT County Assembly Committee	10
County departmental heads	10
ICT staff	10
Employees	20
Local residents	35
TOTAL	**88**

Source: (Researcher, 2025)

3.4.2 Sampling Technique

The study employed a non-probability technique, purposive sampling, which entails choosing individuals with certain characteristics rather than choosing randomly. As defined by Creswell (2021), the purposive sampling method refers to a sampling technique whereby units are chosen for their characteristics deemed crucial for the study. Purposive sampling was suitable for this study for various reasons. Firstly, the study targeted key informants or stakeholders in the county government, including ICT specialists, department heads, service providers, and users who often use digital innovations (Creswell, 2021). Secondly, purposive sampling ensured only individuals who are directly involved in planning or implementing digital transformation strategies or those benefiting from them are selected for meaningful responses (Nilsen, Gustafsson, & Blömeke, 2016). Lastly, purposive sampling was more efficient and less time-consuming since the sample size was retrieved after conducting the pilot study, which involved 10% of the sample size.

3.5. Data Collection Methods

Stratton (2021) describes data collection as obtaining and analyzing accurate data from raw datasets and various sources to get answers to specific research problems, probabilities, and trends to evaluate outcomes.

3.5.1 Data Collection Tools

This research employed primary data collection methods, including obtaining data from sources directly or directly interacting with the participants (Mwangi, 2024). Specifically, the process used surveys or questionnaires to obtain data. This was apt to obtain first-hand information tailored to the research objectives.

3.5.2 Administration of Data Collection Tools

The study's questionnaires were administered through a researcher-administered method, whereby questionnaire interviews took place in person, online, or via phone call between the respondents and the researchers.

3.6 Testing for Validity and Reliability

3.6.1 Validity

Validity tests the accuracy of a measure under study, which is crucial when establishing the research design and research methodologies (Creswell, 2021). Construct and content validity were used to decipher whether the data collection tool accurately represents what is being measured. The study employed Exploratory Factor Analysis to determine the underlying structure of variables, reducing it into smaller sets and examining their relationships. Specifically, the study used Kaiser-Meyer-Olkin and Bartlett's Sphericity statistical values that test for the adequacy of each variable. Costa et al. (2019) state that the rule of thumb when using the KMO statistical method is that values above 0.80 are considered excellent for factor analysis. In contrast, in Bartlett's Test of Sphericity, p-values less than the chosen significance level, like 0.05, suggest that the variables are correlated. Both methods are crucial in determining the existence of an adequate correlation between the study's variables.

3.6.2 Reliability

Reliability in research entails measuring the consistency of a specific measuring tool at different points in time (Amirrudin, Nasution, & Supahar, 2021). This study's questionnaire was measured through Cronbach's alpha to indicate whether the responses are consistent between the variables. The rule of thumb in interpreting the results was for scores with values greater than (α) value of 0.7; the responses were considered to have a higher degree of internal consistency.

3.7 Data Analysis Procedure

Data analysis employs a logical thinking method to interpret data by determining recurring patterns and themes that are relatable to the study's variables (Mwangi, 2024). Completed questionnaires went through data coding, modification, analysis, and tabulation, which was done using descriptive and inferential statistics. Quantitative data was scrutinized using SPSS software version 26. A multiple linear regression analysis was employed to describe the correlation between independent variables and the dependent variable in this study. Irungu (2019) states that a multiple linear regression predicts the value of a response or dependent variable according to two or more predictors or independent variables. The following formula was applied to connect the study's constructs.

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$

Where;

Y = Service Delivery

X_1 = E-Government Services

X_2 = Digital Inclusion

X_3 = Digital Empowerment

X_4 = Digital Security and Resilience

ϵ = Error Term

3.8 Ethical Considerations

Hasan et al. (2021) argue that to obtain, analyze, and publish the results ethically, the researcher must comply with professional standards and ethical conduct throughout the research study. In this regard, the researcher attained an authorization letter from the University for Approval. An authorization from the National Council for Research and Technology (NACOSTI) was also obtained before the study. The research procedures adhered to the confidentiality and anonymity of the responses and personal details of the participants. Participants were also fully informed of the objectives of the study before it began, to obtain a signed informed consent that was used for academic endeavors only. Throughout the research process, the researcher upheld other ethical conduct like transparency, respect for private and intellectual property rights, and impartiality.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This study aimed to assess the role of digital transformation strategies on the service delivery of County Governments in Murang'a County, Kenya. Specifically, this study sought to determine the influence of E-government services, digital inclusion strategies, digital empowerment strategies, and digital security and resilience on service delivery in Murang'a County, Kenya. This chapter presents the statistical methods used to scrutinize the obtained data and test for the null hypotheses. This chapter also covers the participants' response rate, demographic dynamics, and statistical methods like descriptive and inferential analysis.

4.2 Response Rate

The study determined the respondents' response rate for the research instrument. Sataloff and Vontela (2021) describe response rate as the exact number of participants who participated in the research and completed the data collection tools as required. This current study focused on assessing the role of digital transformational strategies in the service delivery of Murang'a County. The study targeted a total population of 88 respondents, including employees and officials from the county executive committee, the ICT County Assembly Committee, ICT staff, departmental heads, and employees across various departments within Murang'a County. Table 2 presents the participant rate for the study.

Table 2: Response Rate

Response	**Frequency**	**Percentage**
Returned	86	97.7
Unreturned	2	2.3
Total	**88**	**100.0**

The response rate outcome in the table above depicts that out of the 88 respondents targeted, 86 successfully filled and returned the research tool, translating to a return rate of 97.7%. This participation rate is attributed to the effective administration and follow-up mechanisms employed

during data collection. Holtom et al. (2022) state that a 60% return rate is sufficient for statistical analysis. On the other hand, Barberio, Savarino, Black and Ford (2022) recommend an average return rate of about 50% as adequate for analysis and reporting. Therefore, the response rate achieved in this study of 97.7% depicts a good sample depiction, ensuring the findings' reliability and generalizability.

4.3 Demographic Information on Respondents

To assess the role of digital transformational strategies on the service delivery of County Governments in Murang'a County, the researcher collected information on respondents' demographic characteristics, which was presented in the first section of the questionnaire. This was necessary for analyzing the composition of the sample. Collecting this data was essential in determining the diversity of participants and assessing their ability to provide credible responses. Additionally, demographic information is necessary in assessing the respondents' backgrounds. According to Luvanda (2022), although demographic factors remain constant, they play an important role in explaining relationships between different study variables. The demographic aspects taken into account entailed sex, age, and education level. The demographic results are showcased in Table 3 below.

Table 3: Demographic Characteristics

Demographic Information	Distribution	Participants (f)	Percentage (%)
Gender	Male	52	60.5
	Female	34	39.5
Age Bracket	20-29 Years	10	11.6
	30-39 Years	30	34.9
	40-49 Years	27	31.4
	50 Years and Above	19	22.1
Level of Education	Diploma	14	16.3
	Bachelor's Degree	44	51.2
	Master's Degree	21	24.4
	Doctorate	7	8.1

The demographic characteristics outcome in the table above shows that most participants were male, comprising 60.5% (52 respondents), while female respondents accounted for 39.5% (34

respondents). This gender distribution suggests that more males are involved in implementing and managing digital transformation strategies within the Murang'a County Government compared to their female counterparts. While this may reflect broader trends in technology and governance sectors, it also shows a potential gap in gender inclusivity in digital transformation initiatives. Females in top positions occupy only 30% of leadership roles in the digital field in Kenya, attributing this to accumulated disadvantages throughout their educational journey. Similarly, the International Labour Organization (2024) highlighted a significant digital gender gap in Kenya, noting that challenges such as disadvantages in education opportunities, unreliable internet, and lower levels of digital literacy disproportionately affect women, hindering their full participation in the digital economy

A breakdown of participants' ages denoted that the largest portion was aged between 30-39 years, accounting for 34.9% (30 respondents), followed by those aged 40-49 years at 31.4% (27 respondents). Respondents aged 50 years and above constituted 22.1% (19 respondents), while those in the 20-29 years category made up 11.6% (10 respondents). These findings suggest that the Murang'a County Government has a workforce primarily composed of middle-aged professionals who are likely to have accumulated a good level of experience in governance and digital transformation efforts. The lower percentage of respondents below 30 years indicates limited recruitment of younger employees, which is likely to influence the integration of emerging technological innovations. Age differences influence technology adoption decisions, with older workers being more affected by subjective norms and perceived behavioral control, which may impact their engagement with new technologies

Regarding education levels, the results show that the largest proportion of the participants (51.2%, 44 respondents) were holders of a bachelor's degree, followed by 24.4% (21 respondents) with a master's degree. Additionally, 16.3% (14 respondents) had attained a diploma, while 8.1% (7 respondents) held a doctorate. These results indicate that the workforce within Murang'a County Government is well-educated, with most respondents possessing at least a university degree. This is an important factor for the study, as those with higher education qualifications have a deeper understanding of digital transformation strategies and their impact on service delivery. Having employees with master's and doctorate degrees suggests a workforce equipped with advanced knowledge and expertise, which may contribute to better problem-solving, informed decision-making, and the effective integration of digital solutions in county governance. These findings

imply that a well-educated workforce contributes to the successful implementation and usage of effectiveness of digital initiatives in the public sector. Additionally, educational programs can address sluggish digitalization processes in the public realm, emphasizing the significance of education in driving digital transformation.

4.4 Pilot Testing Results

Pilot testing serves as a preliminary evaluation to refine research tools, ensuring their clarity, reliability, and effectiveness. Pilot testing helps identify and address potential issues before the full-scale data collection exercise, enhancing the overall study's reliability and validity. This study examines the relationship between digital transformational approaches and service delivery in Murang'a County in Kenya. A pilot study was done to ascertain the reliability and validity of research tools, using a rule of thumb of 10% as suggested by (Bujang, Omar, Foo & Hon, 2024). 10% of the participants were equivalent to nine (9) respondents who were selected through a random sampling technique. The respondents who participated in the piloting did not form part of the main analysis. Pilot testing involved reliability testing, validity testing, and factor analysis.

4.4.1 Reliability Test

Reliability refers to the consistency of respondents' responses across the items on a multiple-item measure (Ahmed, Olanipekun, Opoku & Sutrisna, 2022). This study conducted reliability testing, which was calculated using Cronbach's alpha formula, and results were generated with the aid of SPSS version 26.0. Reliability test results are presented in Table 4.

Table 4: Reliability Analysis Results

Variable	Number of Items	α>0.7	Comment
E-Government Services	5	0.883	Reliable
Digital Inclusion Strategies	7	0.916	Reliable
Digital Empowerment Strategies	6	0.836	Reliable
Digital Security And Resilience Measures	6	0.787	Reliable
Service Delivery	6	0.853	Reliable

The findings in Table 4 depict that Cronbach's alpha for all the variables was above the acceptable threshold of 0.7, confirming the reliability of the questionnaire for data collection. The E-government services variable had a Cronbach's alpha of 0.883, digital inclusion strategies scored 0.916, digital empowerment strategies recorded 0.836, digital security and resilience measures achieved 0.787, and service delivery had a score of 0.853. These results suggest that the items used to measure each variable demonstrated high internal consistency and reliability. In this study, digital inclusion strategies, e-government services, digital empowerment strategies, and service delivery demonstrated good reliability (>0.8), while digital security and resilience measures showed acceptable reliability (>0.7). These findings support the reliability of the data for further statistical analysis and ensure that the study's conclusions are well-supported. The high reliability of the variables suggests that the research instrument effectively captured the intended constructs.

4.4.2 Validity Test

This study used both construct validity and content validity. Table 5 shows the construct validity results tested using KMO and the threshold was set at 0.5.

Table 5: Validity Test Results

Variable	KMO	P-Value
E-Government Services	.837	.000
Digital Inclusion Strategies	.889	.000
Digital Empowerment Strategies	.861	.000
Digital Security And Resilience Measures	.721	.000
Service Delivery	.863	.000

The validity results in Table 5 show that the Kaiser-Meyer-Olkin (KMO) statistic for all the study variables, e-government services, digital inclusion strategies, digital empowerment strategies, digital security and resilience measures, and service delivery are above the recommended threshold of 0.5, indicating a high level of validity. Specifically, the KMO values ranged from 0.721 to 0.889, with digital inclusion strategies recording the highest KMO value of 0.889, followed by

service delivery at 0.863, digital empowerment strategies at 0.861, e-government services at 0.837, and digital security and resilience measures at 0.721. These values confirm that the data collected is suitable for factor analysis and meets the sampling adequacy conditions.

In addition to the KMO test, Bartlett's Test of Sphericity was significant for all the study variables ($p = .000$, at $p < .05$). This indicates that the correlation matrices are not identity matrices, meaning there are sufficient inter-item correlations to justify factor analysis. The combination of high KMO values and significant Bartlett's Test results proves strongly that the questionnaire sections effectively measure the intended constructs. The strong validity of the data ensures that the study's conclusions are based on well-structured and reliable measurements, enhancing the credibility of subsequent analyses on the role of digital transformation strategies in service delivery within Murang'a County Government.

4.5 Descriptive Analysis

Descriptive analysis is a statistical method used to summarize, organize, and interpret data by presenting measures such as mean, median, standard deviation, and frequency distributions. It is necessary in analysis as it provides a clear understanding of data patterns, trends, and distributions, facilitating informed decision-making. This section presents the descriptive analysis results for each of the study variables, including E-government services, digital inclusion strategies, digital empowerment strategies, digital security and resilience measures, and service delivery.

4.5.1 E-Government Services

The study's first objective was to assess the effects of e-government services on service delivery in Murang'a County, Kenya. The respondents were asked to rate their agreement or otherwise on statements relating to E-government services. The descriptive statistics results are shown in Table 6.

Table 6: Descriptive Statistics on E-government Services

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
The county uses various e-government platforms, including websites, social media,	5.80%	4.70%	15.10%	25.60%	48.80%	4.07	1.17

and online portals.							
E-government services are accessible on multiple devices, including mobile phones, computers, etc.	5.80%	9.30%	15.10%	20.90%	48.80%	3.98	1.25
The county government promptly responds to complaints or technical challenges hindering service accessibility.	5.80%	3.50%	18.60%	17.40%	54.70%	4.12	1.18
The county regularly updates its e-government platforms to promote service delivery.	4.70%	15.10%	18.60%	20.90%	40.70%	3.78	1.26
County government officials often engage the public to explain the benefits of e-government services.	4.70%	8.10%	10.50%	22.10%	54.70%	4.14	1.18
Overall Mean						**4.018**	

The results in Table 6 show that majority (74.4%) of respondents agreed that the county uses various e-government platforms, including websites, social media, and online portals, to improve service delivery (Mean = 4.07, SD = 1.17). The mean suggests a general consensus on the availability of these digital platforms, while the standard deviation indicates some variation in experiences, possibly due to differences in accessibility or efficiency of these platforms. Similarly, 69.7% of respondents agreed that e-government services were accessible on multiple devices such as mobile phones and computers (Mean = 3.98, SD = 1.25). The mean suggests a generally positive perception of accessibility, though slightly lower than the previous indicator. The relatively higher standard deviation indicates differences in respondents' experiences, which may be attributed to disparities in internet access, digital literacy, or device availability among users.

Regarding responsiveness, most (72.1%) of the respondents agreed that the county government promptly addresses complaints or technical challenges hindering service accessibility (Mean = 4.12, SD = 1.18). The mean reflects a strong perception of timely responsiveness to service challenges, suggesting that digital service users receive adequate support. However, the standard deviation indicates some inconsistency, implying that while many respondents experienced timely responses, others may have encountered delays or inefficiencies. Additionally, 61.6% of respondents agreed that the county regularly updates its e-government platforms to improve service delivery (Mean = 3.78, SD = 1.26). The moderate mean suggests that while respondents acknowledge periodic updates, the frequency or effectiveness of these updates may not be consistent across all departments. The higher standard deviation indicates variability in respondents' perceptions, suggesting that improvements in regular updates could enhance digital service efficiency.

Furthermore, 76.8% of respondents agreed that county government officials often engage the public to explain the benefits of e-government services (Mean = 4.14, SD = 1.18). The high mean value suggests that public engagement efforts regarding digital services are widely recognized. However, the standard deviation shows some level of variation, indicating that while some respondents perceive active engagement, others may have limited exposure to such initiatives. The overall mean across all statements was 4.018, suggesting a generally positive perception of e-government services in Murang'a County. However, variations in standard deviations indicate inconsistencies in implementation, accessibility, and responsiveness. These findings imply that even though digital transformation programs have been embraced, further improvements in accessibility, regular updates, and uniform responsiveness could enhance service delivery effectiveness.

4.5.2 Digital Inclusion Strategies

The second objective of the study was to determine the effects of digital inclusion strategies on service delivery of Murang'a County Government. The respondents were asked to rate their agreement or otherwise on statements relating to digital inclusion strategies. The descriptive statistics results are shown in Table 7

Table 7:Descriptive Statistics on Digital Inclusion Strategies

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
Marginalized groups, such as women and youth, are actively included in discussions on service delivery priorities.	3.50%	9.30%	31.40%	26.70%	29.10%	3.69	1.10
The Muran'ga County government effectively engages all residents through transparent communication and feedback mechanisms.	1.20%	7.10%	38.80%	24.70%	28.20%	3.72	1.00
Citizens are actively involved in decision-making processes related to service delivery in Murang'a County.	5.90%	16.50%	29.40%	25.90%	22.40%	3.42	1.18
All residents have equal access to official information about county e-government services.	2.30%	8.10%	30.20%	29.10%	30.20%	3.77	1.05
The county has reliable customer support, such as online chat, helpdesk, or hotline for e-government services.	5.80%	8.10%	27.90%	37.20%	20.90%	3.59	1.09
The county governments facilitate internet connectivity and reliable networks to support e-government services in remote areas.	7.00%	7.00%	27.90%	30.20%	27.90%	3.65	1.17
The county has measures to ensure the accessibility of digital	4.70%	8.10%	27.90%	26.70%	32.60%	3.74	1.14

services to people with disabilities, such as screen readers, easy navigation, and sign language support.	
Overall Mean	**3.654**

The results in Table 7 indicate that 55.8% of respondents agreed that marginalized groups, such as women and youth, are actively included in discussions on service delivery priorities (Mean = 3.69, SD = 1.10). The moderate mean suggests that while efforts are being made to promote inclusivity, there are variations in experiences among respondents. The standard deviation indicates some level of inconsistency, implying that certain groups still face challenges in participating in service delivery discussions. Similarly, 52.9% of respondents agreed that Murang'a County Government effectively engages all residents through transparent communication and feedback mechanisms (Mean = 3.72, SD = 1.00). The mean suggests a generally positive perception of engagement strategies, while the lower standard deviation indicates more consistency in responses. However, the presence of neutral responses (38.8%) suggests that some residents may not have fully experienced these engagement efforts, highlighting a need for improved outreach and communication strategies.

Regarding citizen participation in decision-making processes, 48.3% of respondents agreed that citizens are actively involved in service delivery decisions (Mean = 3.42, SD = 1.18). The relatively lower mean value suggests that while some initiatives exist, there is room for improvement in enhancing citizen engagement in decision-making. The higher standard deviation indicates a wider disparity in responses, suggesting that participation levels may not be uniform across different communities or groups. Furthermore, 59.3% of respondents agreed that all residents have equal access to official information about county e-government services (Mean = 3.77, SD = 1.05). The mean suggests that information accessibility is generally well-facilitated, though the variation in responses indicates that certain residents may still experience barriers in accessing official information, potentially due to digital literacy gaps or infrastructural limitations.

In terms of customer support, 58.1% of respondents agreed that the county provides reliable customer support services such as online chat, helpdesks, or hotlines for e-government services

(Mean = 3.59, SD = 1.09). While the mean suggests a moderately positive perception of customer support, the standard deviation indicates variability in the effectiveness of these services. Some respondents may have experienced challenges in accessing timely and reliable assistance. Regarding internet connectivity, 58.1% of respondents agreed that the county facilitates internet connectivity and reliable networks to support e-government services, particularly in remote areas (Mean = 3.65, SD = 1.17). The mean suggests a fairly positive view of internet infrastructure, but the higher standard deviation implies inconsistencies in network availability, particularly in less urbanized areas where digital access remains a challenge.

Additionally, 59.3% of respondents agreed that the county has measures to ensure the accessibility of digital services for people with disabilities, such as screen readers, easy navigation, and sign language support (Mean = 3.74, SD = 1.14). The mean reflects a recognition of efforts toward digital inclusivity, though the standard deviation suggests some variation in accessibility experiences, indicating that further enhancements in assistive technologies may be necessary. The overall mean across all statements was 3.654, suggesting that digital inclusion strategies in Murang'a County are generally perceived positively but with areas requiring improvement. The variations in standard deviations imply that while some aspects of digital inclusion, such as communication and accessibility, are well implemented, disparities remain in internet connectivity, citizen participation, and support services. These findings suggest that enhancing engagement mechanisms, strengthening digital infrastructure, and ensuring broader accessibility to e-government services could further improve service delivery in the county.

4.5.3 Digital Empowerment Strategies

The third objective of the study was to analyze the influence of digital empowerment strategies on service delivery by the Murang'a County government. The respondents were asked to rate their agreement or otherwise on statements relating to digital empowerment strategies. The descriptive statistics results are shown in Table 8.

Table 8: Descriptive Statistics on Digital Empowerment Strategies

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
The county provides adequate training on ICT	8.10%	7.00%	23.30%	24.40%	37.20%	3.76	1.25

infrastructure and e-government services to employees.							
The county provides regular and effective awareness programs to enhance residents' digital literacy on digital transformation platforms.	3.50%	5.80%	29.10%	23.30%	38.40%	3.87	1.11
The process of accessing e-government services is user-friendly and easy to understand.	3.50%	1.20%	16.30%	46.50%	32.60%	4.03	0.93
The county partners with local organizations to enhance awareness of digital services.	4.70%	1.20%	23.30%	29.10%	41.90%	4.02	1.06
Murang'a County provides access to digital resources like community training centres and public WIFI.	3.50%	3.50%	23.30%	26.70%	43.00%	4.02	1.06
The costs of using or accessing digital government services are reasonable and affordable to most citizens.	1.20%	5.80%	27.90%	30.20%	34.90%	3.92	0.98
Overall Mean						**3.937**	

The results in Table 8 depict that most (61.6%) of the respondents agreed that the county provides adequate training on ICT infrastructure and e-government services to employees (Mean = 3.76, SD = 1.25). The mean suggests that while efforts are made to enhance employee digital skills, variations exist in training accessibility and effectiveness. The relatively high standard deviation indicates differing experiences among employees, suggesting that some may not have received sufficient training opportunities. Similarly, majority (61.7%) of the respondents agreed that the county provides regular and effective awareness programs to enhance residents' digital literacy on digital transformation platforms (Mean = 3.87, SD = 1.11). The mean suggests a generally positive

perception of awareness programs, while the standard deviation indicates some variation in implementation, implying that improvements may be needed to ensure consistent outreach across different communities.

Regarding ease of access, 79.1% of respondents agreed that the process of accessing e-government services is user-friendly and easy to understand (Mean = 4.03, SD = 0.93). The high mean value reflects strong agreement on the accessibility of digital services, while the relatively lower standard deviation suggests a consistent perception among respondents, indicating that most users find the e-government platforms intuitive and easy to navigate. Additionally, 71.0% of respondents agreed that the county partners with local organizations to enhance awareness of digital services (Mean = 4.02, SD = 1.06). The mean suggests that partnerships play a key role in digital empowerment initiatives, while the standard deviation indicates some level of variation in experiences, possibly due to differences in partnership effectiveness across various areas.

Moreover, most (69.7%) of the respondents agreed that Murang'a County provides access to digital resources such as community training centers and public WiFi (Mean = 4.02, SD = 1.06). The mean suggests a positive perception of digital resource availability, though the variation in responses indicates that some areas may have limited access to these resources, highlighting the need for further expansion and accessibility improvements. In terms of affordability, 65.1% of respondents agreed that the costs of using or accessing digital government services are reasonable and affordable to most citizens (Mean = 3.92, SD = 0.98). The mean suggests that digital services are generally perceived as cost-effective, though the standard deviation indicates differences in affordability perceptions, possibly due to variations in internet costs or financial constraints among residents. The overall mean across all statements was 3.937, suggesting that digital empowerment strategies in Murang'a County are generally well-received. However, variations in standard deviations indicate disparities in training, digital resource availability, and affordability.

4.5.4 Digital Security and Resilience Measures

The fourth objective of the study was to establish the influence of digital security and resilience measures on service delivery in Murang'a County Government. The respondents were asked to rate their agreement or otherwise on statements relating to risk managem digital security and resilience measures. The descriptive statistics results are shown in Table 9.

Table 9: Descriptive Statistics on Digital Security and Resilience Measures

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
Murang'a County has robust cybersecurity policies to protect its digital systems.	0.00%	9.30%	24.40%	33.70%	32.60%	3.9	0.97
The county government employs data encryption and security measures to protect citizens' digital transactions.	3.50%	5.80%	23.30%	30.20%	37.20%	3.92	1.08
The county government conducts frequent cybersecurity audits and training for staff on digital security practices.	3.60%	4.80%	26.20%	26.20%	39.30%	3.93	1.08
The county has backup systems and disaster recovery plans to prevent service disruptions and protocols in case of cyberattacks.	3.50%	4.70%	19.80%	29.10%	43.00%	4.03	1.07
The county government has a comprehensive whistleblower protection strategy for those reporting corruption.	0.00%	2.30%	16.30%	31.40%	50.00%	4.29	0.82
Murang'a County has clear policies and automated services	3.50%	14.00%	24.40%	30.20%	27.90%	3.65	1.14

minimizing human interactions and manipulation of the services reducing corruption.	
Overall Mean	**3.953**

The results in Table 9 indicate that most (66.3%) of the respondents were in agreement that Murang'a County has robust cybersecurity policies to protect its digital systems (Mean = 3.90, SD = 0.97). The moderate mean suggests a general consensus on the existence of cybersecurity policies, though the standard deviation indicates some variation in perception, possibly due to differences in awareness or effectiveness of implementation. Similarly, majority (67.4%) of the respondents agreed that the county government employs data encryption and security measures to protect citizens' digital transactions (Mean = 3.92, SD = 1.08). The mean suggests that encryption and digital security measures are perceived as relatively effective, though the higher standard deviation implies that some respondents may have encountered security challenges or inconsistencies in implementation.

Regarding cybersecurity audits and staff training, 65.5% of respondents agreed that the county conducts frequent cybersecurity audits and training for employees on digital security practices (Mean = 3.93, SD = 1.08). The mean value suggests a generally positive perception of security audits and training programs, though the standard deviation indicates some differences in respondents' experiences, possibly due to inconsistent training schedules or accessibility. Additionally, 72.1% of respondents agreed that the county has backup systems and disaster recovery plans to prevent service disruptions and protocols in case of cyberattacks (Mean = 4.03, SD = 1.07). The high mean suggests strong agreement on the existence of disaster recovery plans, while the moderate standard deviation indicates slight variability in perceptions, suggesting that some respondents may not be fully aware of these measures or their effectiveness.

Moreover, 81.4% of respondents agreed that the county government has a comprehensive whistleblower protection strategy for those reporting corruption (Mean = 4.29, SD = 0.82). The highest mean in this category suggests strong confidence in whistleblower protection measures, while the lower standard deviation indicates a more uniform perception among respondents,

implying consistent implementation and awareness of these policies. In terms of automation and anti-corruption measures, 58.1% of respondents agreed that Murang'a County has clear policies and automated services that minimize human interactions and reduce corruption (Mean = 3.65, SD = 1.14). The mean suggests a moderate level of agreement, indicating that while some digital governance measures are in place, there is room for improvement in minimizing corruption through automation. The higher standard deviation indicates varied responses, suggesting that experiences with digital anti-corruption measures may differ across county departments and services. The overall mean across all statements was 3.953, suggesting that digital security and resilience measures in Murang'a County are generally perceived as effective. However, variations in standard deviations indicate inconsistencies in implementation, awareness, and accessibility of some security measures.

4.5.5 Service Delivery

The dependent variable was service delivery in Murang'a County Government. The respondents were asked to rate their agreement or otherwise on statements relating to service delivery in Murang'a County Government. The descriptive statistics results are shown in Table 10.

Table 10:Descriptive Statistics on Service Delivery

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
Murang'a County provides timely essential services and meets the expected delivery schedules.	4.70%	2.30%	24.40%	31.40%	37.20%	3.94	1.07
Most citizens within Murang'a County can easily access essential services.	3.50%	5.80%	16.30%	32.60%	41.90%	4.03	1.07
The quality of essential services provided by Murang'a County meets residents' expectations.	3.50%	4.70%	22.40%	31.80%	37.60%	3.95	1.06

Service delivery in Murang'a County is consistently efficient and effective across all sectors.	2.40%	7.10%	15.30%	36.50%	38.80%	4.02	1.02
The existing ICT infrastructure in the county has minimized corruption cases in service delivery.	3.50%	9.30%	19.80%	25.60%	41.90%	3.93	1.15
The existing ICT infrastructure in the county has minimized bureaucratic delays in service delivery.	2.30%	8.10%	18.60%	25.60%	45.30%	4.03	1.09
Overall Mean						**3.983**	

The descriptive statistics on service delivery as presented in Table 10 indicate that majority (68.6%) of the respondents agreed that Murang'a County provides timely essential services and meets the expected delivery schedules (Mean = 3.94, SD = 1.07). The mean suggests a generally positive perception of timely service provision, while the standard deviation indicates some variation, suggesting that while many respondents experienced prompt service delivery, others may have encountered delays. Similarly, majority (74.5%) of the respondents agreed that most citizens within Murang'a County could easily access essential services (Mean = 4.03, SD = 1.07). The mean suggests that accessibility to essential services is widely recognized, though the standard deviation indicates some differences in responses, possibly due to variations in infrastructure availability or geographical disparities in service distribution.

Regarding service quality, most (69.4%) of the respondents agreed that the quality of essential services provided by Murang'a County meets residents' expectations (Mean = 3.95, SD = 1.06). The mean suggests a generally positive perception of service quality, though the standard deviation indicates some variation, suggesting that service quality may not be uniform across different sectors or areas within the county. Additionally, the majority (75.3%) of the respondents agreed that service delivery in Murang'a County is consistently efficient and effective across all sectors

(Mean = 4.02, SD = 1.02). The high mean value suggests a strong perception of efficiency in service delivery, while the relatively lower standard deviation indicates a consistent agreement among respondents. However, the presence of neutral and disagreeing responses suggests that certain sectors may experience inefficiencies that require further attention.

Moreover, most (67.5%) of the respondents agreed that the existing ICT infrastructure in the county has minimized corruption cases in service delivery (Mean = 3.93, SD = 1.15). The mean suggests that digital transformation has played a role in reducing corruption, though the higher standard deviation indicates some variation in perceptions, possibly due to differences in exposure to digital systems or inconsistencies in enforcement. Similarly, majority (70.9%) of the respondents agreed that the existing ICT infrastructure in the county has minimized bureaucratic delays in service delivery (Mean = 4.03, SD = 1.09). The high mean value suggests a positive perception of ICT's role in streamlining processes, while the standard deviation indicates some differences in experiences, possibly due to variations in system implementation and efficiency across departments.

The overall mean across all statements was 3.983, suggesting that service delivery in Murang'a County is generally perceived as effective, with ICT infrastructure playing a key role in improving efficiency, accessibility, and corruption reduction. However, variations in standard deviations indicate that some inconsistencies remain in service delivery timelines, quality, and the effectiveness of digital governance measures. These findings suggest that while the county has made significant progress in improving service delivery, further efforts are needed to enhance uniformity in service provision and strengthen ICT systems to eliminate remaining inefficiencies.

4.6 Inferential Analysis Results

This section presents correlation and regression results on the relationship between digital transformational strategies and service delivery at Murang'a County in Kenya.

4.6.1 Correlation Analysis Results

	Service Delivery	E-Government Services	Digital Inclusion Strategies	Digital Empowerment Strategies	Digital Security Resilience Measures

Service Delivery	Pearson Correlation	1.000				
	Sig. (2-tailed)					
E-Government Services	Pearson Correlation	.624**	1.000			
	Sig. (2-tailed)	0.000				
Digital Inclusion Strategies	Pearson Correlation	.612**	.543**	1.000		
	Sig. (2-tailed)	0.000	0.000			
Digital Empowerment Strategies	Pearson Correlation	.752**	.636**	.725**	1.000	
	Sig. (2-tailed)	0.000	0.000	0.000		
Digital Security Resilience Measures	Pearson Correlation	.618**	.644**	.683**	.701**	1.000
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	

** Correlation is significant at the 0.01 level (2-tailed).

Table 11: Correlation Matrix

The study conducted a correlation analysis to determine the association between digital transformation strategies and service delivery in Murang'a County Government. The correlation coefficient was computed to assess whether the independent variables were interdependent and to establish whether the independent variables were associated with the dependent variable, service delivery. The analysis determined the strength and the direction of the association between e-government services, digital inclusion strategies, digital empowerment strategies, digital security and resilience measures, and service delivery. This helped to determine the extent to which these

digital transformation strategies correlate with the overall effectiveness and efficiency of service delivery in Murang'a County Government. The results of the correlation analysis for this study are presented in Table 11.

The correlation matrix in Table 11 shows that there was a moderate positive and significant association between e-government services and service delivery in Murang'a County Government ($r = 0.624$, $p < 0.01$) at the 1% level of significance. This implies that the implementation of e-government services is positively correlated with improved service delivery. These findings are consistent with those of Kumar, Sachan and Mukherjee (2023) who observed that the adoption of e-government platforms, such as online service portals and digital communication channels, improves service accessibility, reduces bureaucratic inefficiencies, and improves overall citizen satisfaction.

The study also found a moderate positive and significant association between digital inclusion strategies and service delivery ($r = 0.612$, $p < 0.01$) at the 1% level of significance. This suggests that initiatives aimed at ensuring digital access for all residents, including marginalized groups, contribute to enhanced service delivery. These findings concurs with those of Wang and Si (2024) who reported that counties that actively promote digital inclusion through public internet access, digital literacy training, and inclusive participation in governance experience improved service efficiency and citizen engagement.

Similarly, the results indicate a strong positive and significant association between digital empowerment strategies and service delivery ($r = 0.752$, $p < 0.01$) at the 1% level of significance. This demonstrates that digital empowerment efforts, such as ICT training for employees and public digital awareness programs, are strongly linked to improved service delivery. These findings are in agreement with the conclusion made by Tuoi and Thanh (2023) that organizations that invest in digital skills development and ICT capacity building among employees and citizens achieve better outcomes in service efficiency and transparency.

Additionally, the study revealed a moderate positive and significant association between digital security and resilience measures and service delivery ($r = 0.618$, $p < 0.01$) at the 1% level of significance. This indicates that the implementation of cybersecurity policies, data protection measures, and disaster recovery plans positively contributes to the effectiveness of service delivery in Murang'a County Government. These findings are consistent with the conclusions of Hossain,

Yigitcanlar, Nguyen and Xu (2024), who noted that counties with strong digital security frameworks experience fewer disruptions, enhanced citizen trust in online services, and greater efficiency in digital service provision.

4.6.2 Regression Analysis Results

In addition to correlation analysis, regression analysis was conducted to establish the statistical significance and relationship between digital transformation strategies (e-government services, digital inclusion strategies, digital empowerment strategies, and digital security and resilience measures) and service delivery in Murang'a County Government. The analysis aimed to determine the extent to which these digital transformation strategies influence service delivery and to assess their predictive power in explaining variations in service delivery. Table 12 presents the model summary results.

Table 12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780a	0.608	0.589	0.50553

a. Predictors: (Constant), Digital Security Resilience Measures, E-Government Services, Digital Inclusion Strategies, Digital Empowerment Strategies

The model summary results in Table 12 depict a coefficient of determination (R-squared) of 0.608 and an adjusted R-squared of 0.589 at a 95% significance level. The R squared value of 0.608 implies that the independent variables used in this study, e-government services, digital inclusion strategies, digital empowerment strategies, and digital security and resilience measures jointly explain 60.8% of the variation in service delivery in Murang'a County Government. This implies that these digital transformation strategies have a strong combined effect on service delivery in the County. The adjusted R squared value of 0.589 suggests that, excluding the constant variable, these digital transformation strategies explain 58.9% of the variation in service delivery. The remaining 41.1% of the variation in service delivery can be attributed to other factors not included in this model. Table 13 shows analysis of variance results.

Table 13: Analysis of Variance (ANOVA) Results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	32.125	4	8.031	31.426	.000[b]
	Residual	20.701	81	0.256		
	Total	52.826	85			

a. Dependent Variable: Service Delivery

b. Predictors: (Constant), Digital Security Resilience Measures, E-Government Services, Digital Inclusion Strategies, Digital Empowerment Strategies

The ANOVA results in Table 13 ndicate that the model adopted in this study was statistically significant in explaining the influence of digital transformation strategies, e-government services, digital inclusion strategies, digital empowerment strategies, and digital security and resilience measures on service delivery in Murang'a County Government. This is evidenced by a p-value of 0.000, which is less than the significance level of 0.05. The F statistic of 31.426 further confirms the statistical significance of the model. These results suggest that the independent variables collectively have a significant influence on service delivery. Table 14 presents the regression coefficient results, providing further details on the individual contributions of each independent variable to service delivery.

Table 14: Multiple Regression of Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.763	0.298		2.561	0.012
	E-Government Services	0.185	0.085	0.21	2.171	0.033
	Digital Inclusion Strategies	0.070	0.097	0.078	0.723	0.472
	Digital Empowerment Strategies	0.494	0.111	0.514	4.445	0.000

Digital Security Resilience Measures	0.478	0.057	0.491	8.355	0.000

a. Dependent Variable: Service Delivery

The regression model therefore became;

$Y = 0.763+0.185X_1+0.070X_2+0.494X_3+ 0.478X_4$

Where:

Y = Service Delivery

X_1= E-Government Services

X_2 = Digital Inclusion Strategies

X_3 = Digital Empowerment Strategies

X_4= Digital Security Resilience Measures

The regression of coefficients results in Table 14 indicates that e-government services were positively and significantly related to service delivery ($\beta = 0.185$, $p = 0.033 < 0.05$). This suggests that adopting e-government platforms contributes to improved service delivery by enhancing accessibility, efficiency, and transparency in county operations. The findings imply that improving e-government services can lead to better responsiveness and engagement between the government and citizens. This led to the rejection of the null hypothesis **(H_{01}).** The study there found that e-government services have a significant influence on the service delivery of the Murang'a County Government. This is consistent with the findings of a study by Wambua (2017), who assessed the role of land information management systems in county governments across Kenya and found that e-government services involving land information management systems contributed towards land tenure security, access to credit, dispute resolution, and real estate markets.

Digital inclusion strategies were found to have a positive but not statistically significant relationship with service delivery ($\beta = 0.070$, $p = 0.472 > 0.05$). This suggests that even though digital inclusion efforts, such as providing internet access and promoting digital literacy, may contribute to service delivery improvements, their impact is not substantial in this context. This

could indicate the need for more targeted or effective inclusion initiatives to bridge digital access gaps and ensure broader participation in digital governance. Consequently, the study did not reject the null hypothesis (**H_{02}**). The study therefore concluded that digital inclusion has no significant influence on the service delivery of the Murang'a County Government. These findings concurs with assertions by Anguche et al. (2024) that, digital inclusion entails promoting internet access and digital literacy training to remote and underserved populations, fostering equal opportunities. In Kenya's devolved units, digital inclusion is paramount as it supports access to diverse e-government services for all populations, enhancing efficiency and public service delivery (Wambua, 2016). The results also supports the observations by Anguche et al. (2024) that e-government programs in counties like Nairobi, Kiambu, and Taita Taveta had positively impacted efficient and effective service delivery with services such as e-business licensing and e-parking.

Among the variables, digital empowerment strategies had a strong positive and significant influence on service delivery ($\beta = 0.494$, $p = 0.000 < 0.05$). These results highlight that investing in digital literacy programs, ICT training, and capacity-building initiatives significantly enhances service efficiency and accessibility. The findings suggest that empowering employees and residents with digital skills enables better utilization of digital services, ultimately improving service delivery outcomes. The study thus rejected the null hypothesis (**H_{03}**). Therefore, the study found that digital empowerment has a significant influence on the service delivery of the Murang'a County Government. These results agree with the findings of a study by Kabwe et al. (2024), who found that even though digitalization among the council was hampered by hurdles like the digital divide, infrastructure challenges, digital illiteracy, and lack of human resources, the council and residents displayed enthusiasm for digital empowerment programs.

Similarly, digital security and resilience measures exhibited a strong positive and significant association with service delivery ($\beta = 0.478$, $p = 0.000 < 0.05$). This indicates that effective cybersecurity policies, data protection measures, and disaster recovery plans play a critical role in ensuring reliable and secure digital services. The findings imply that strengthening digital security enhances user trust, minimizes service disruptions, and promotes efficiency in service delivery. This led to the rejection of the null hypothesis (**H_{04}**), and the conclusion was that digital security and resilience have a significant influence on the service delivery of the Murang'a County Government. These results suggest that despite digital inclusion strategies contribute to service delivery, they are not as influential as other digital transformation strategies. Instead, county

governments should focus on strengthening digital empowerment initiatives and security measures while leveraging e-government platforms to enhance service efficiency. These findings are consistent with the conclusions of Kimani and Otieno (2022), who emphasized the role of digital literacy and cybersecurity in improving public service delivery in county governments.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter covers summary of key findings, conclusions, recommendations and suggestions for further studies.

5.2 Summary of the Findings

The aim of this study was to assess the effect of digital transformation strategies on service delivery in Murang'a County Government, Kenya. The specific objectives were to evaluate the influence of e-government services, digital inclusion strategies, digital empowerment strategies, and digital security and resilience measures on service delivery in Murang'a County. The study targeted a population of 88 respondents, comprising staff from the County Executive Committee, ICT County Assembly Committee, ICT staff, departmental heads, employees from different departments, and local residents, with census approach being adopted. Data was collected using questionnaires, and a pilot study was conducted to ensure validity and reliability. The analysis employed both descriptive and inferential statistics, including multiple regression analysis.

5.2.1 E-Government Services on Service Delivery

The first objective of the study was to assess the effects of e-government services on service delivery in Murang'a County, Kenya. The study found that the majority of respondents (74.4%) agreed that the county uses various e-government platforms such as websites, social media, and online portals to enhance service delivery (Mean = 4.07, SD = 1.17). These findings suggest that digital platforms play a key role in improving accessibility and efficiency in service provision. However, the standard deviation indicates variations in experiences, possibly due to differences in digital literacy or access to these platforms. Similarly, 69.7% of respondents agreed that e-government services were accessible on multiple devices, including mobile phones and computers (Mean = 3.98, SD = 1.25). While the mean reflects a generally positive perception, the higher standard deviation suggests disparities in accessibility, potentially influenced by network coverage and technological infrastructure.

Regarding responsiveness, 72.1% of respondents agreed that the county government promptly addresses complaints and technical challenges related to e-government services (Mean = 4.12, SD

= 1.18). This indicates that most citizens perceive the county as responsive to digital service challenges, though the variability in responses suggests some inconsistency in handling complaints. Additionally, 61.6% of respondents agreed that the county regularly updates its e-government platforms to improve service delivery (Mean = 3.78, SD = 1.26). While this mean suggests a moderate level of agreement, the relatively higher standard deviation implies differing experiences, highlighting the need for more frequent and visible updates. Furthermore, 76.8% of respondents agreed that county officials actively engage the public to explain the benefits of e-government services (Mean = 4.14, SD = 1.18). The high mean suggests that public engagement is widely recognized, but the standard deviation indicates some respondents may not have had sufficient exposure to these initiatives.

Correlation analysis revealed a positive and significant association between e-government services and service delivery ($r = 0.624$, $p < 0.01$), indicating that improvements in e-government services enhance service efficiency. Regression analysis further confirmed a moderate but significant effect of e-government services on service delivery ($\beta = 0.185$, $p = 0.033$). These findings align with those of Kamau and Njenga (2022), who found that e-government adoption enhances transparency, efficiency, and accessibility in public service delivery. The results led to the rejection of null hypothesis **(H_{01})** and the conclusions was that e-government services have significant influence on the service delivery of the Murang'a County Government. This is consistent with the findings of a study by Wambua (2017) who assessed the role of land information management systems in county governments across Kenya and found that e-government services involving land information management systems contributed towards land tenure security, access to credit, dispute resolution, and real estate markets.

5.2.2 Digital Inclusion Strategies on Service Delivery

The second objective of the study was to determine the effects of digital inclusion strategies on service delivery in Murang'a County Government. The study found that 55.8% of respondents agreed that marginalized groups, such as women and youth, are actively included in discussions on service delivery priorities (Mean = 3.69, SD = 1.10). The moderate mean suggests efforts to promote inclusivity, but the standard deviation indicates inconsistencies, suggesting that some groups still face barriers in participation. Similarly, 52.9% of respondents agreed that the county effectively engages all residents through transparent communication and feedback mechanisms

(Mean = 3.72, SD = 1.00). While the mean suggests a generally positive perception, the relatively high percentage of neutral responses (38.8%) implies that some residents may not have fully experienced these engagement efforts.

Regarding citizen participation, 48.3% of respondents agreed that residents are actively involved in decision-making processes (Mean = 3.42, SD = 1.18). The lower mean suggests that while some initiatives exist, there is a need to enhance citizen engagement in governance. The higher standard deviation reflects differences in participation levels across various demographic groups. Furthermore, 59.3% of respondents agreed that all residents have equal access to official information about county e-government services (Mean = 3.77, SD = 1.05). The moderate mean indicates recognition of information accessibility, but the standard deviation suggests that some residents still face barriers in obtaining official information. The study also found that 58.1% of respondents agreed that the county provides reliable customer support for e-government services (Mean = 3.59, SD = 1.09). While the mean suggests a positive perception, the variation in responses implies inconsistent service experiences.

Correlation analysis revealed a positive but weaker association between digital inclusion strategies and service delivery ($r = 0.612$, $p < 0.01$). In addition, regression analysis indicated that digital inclusion strategies had a positive but statistically insignificant relationship with service delivery ($\beta = 0.070$, $p = 0.472$). These findings suggest that while digital inclusion plays a role in service delivery, its influence is not as strong as other digital transformation strategies. Consequently, the study did not reject the null hypothesis (**H_{02}).** The study therefore concluded that digital inclusion has no significant influence on the service delivery of the Murang'a County Government. These findings concurs with assertions by Anguche et al. (2024) that, digital inclusion entails promoting internet access and digital literacy training to remote and underserved populations, fostering equal opportunities. In Kenya's devolved units, digital inclusion is paramount as it supports access to diverse e-government services for all populations, enhancing efficiency and public service delivery (Wambua, 2016).

5.2.3 Digital Empowerment Strategies on Service Delivery

The third objective of the study was to analyze the influence of digital empowerment strategies on service delivery in Murang'a County Government. The study found that 61.6% of respondents agreed that the county provides adequate ICT training to employees (Mean = 3.76, SD = 1.25).

The moderate mean suggests a positive perception of digital capacity-building, though the high standard deviation indicates differences in training effectiveness and accessibility. Similarly, 61.7% of respondents agreed that the county offers regular awareness programs to enhance digital literacy (Mean = 3.87, SD = 1.11). The mean suggests that digital literacy initiatives are recognized, though variability in responses suggests that some residents may not fully benefit from these programs.

Regarding accessibility, 79.1% of respondents agreed that e-government services are user-friendly and easy to navigate (Mean = 4.03, SD = 0.93). The high mean indicates strong agreement on the accessibility of digital services, while the low standard deviation suggests a consistent perception among respondents. Additionally, 71.0% of respondents agreed that the county collaborates with local organizations to enhance digital service awareness (Mean = 4.02, SD = 1.06). The mean suggests that partnerships contribute to digital empowerment, though variability in responses indicates differences in effectiveness.

Correlation analysis revealed a strong positive and significant association between digital empowerment strategies and service delivery ($r = 0.752$, $p < 0.01$). In addition, regression analysis confirmed a strong positive effect ($\beta = 0.494$, $p = 0.000$). These findings highlight the critical role of digital empowerment in enhancing service delivery. The study thus rejected the null hypothesis **(H_{03}).** Therefore the study found that digital empowerment has significant influence on the service delivery of the Murang'a County Government. This results agrees with the findings of a study by Kabwe et al. (2024) who found that even though digitalization among the council was hampered by hurdles like the digital divide, infrastructure challenges, digital illiteracy, and lack of human resources, the council and residents displayed enthusiasm for digital empowerment programs.

5.2.4 Digital Security and Resilience Measures on Service Delivery

The fourth objective of the study was to establish the influence of digital security and resilience measures on service delivery in Murang'a County Government. The study found that 66.3% of respondents agreed that the county has robust cybersecurity policies (Mean = 3.90, SD = 0.97). The mean suggests that digital security policies are widely acknowledged, though some variation exists in their perceived effectiveness. Similarly, 67.4% of respondents agreed that the county employs data encryption and security measures to protect digital transactions (Mean = 3.92, SD = 1.08). The mean reflects a generally positive perception, though variability in responses suggests

differences in security implementation.

Regarding risk management, 72.1% of respondents agreed that the county has backup systems and disaster recovery plans to prevent service disruptions (Mean = 4.03, SD = 1.07). The high mean suggests strong recognition of contingency measures, while the moderate standard deviation reflects differences in awareness. Additionally, 81.4% of respondents agreed that the county has a whistleblower protection strategy for reporting corruption (Mean = 4.29, SD = 0.82). This was the highest mean among digital security measures, indicating strong confidence in anti-corruption efforts.

Correlation analysis revealed a moderate but significant association between digital security and service delivery ($r = 0.618$, $p < 0.01$). Regression analysis further confirmed its strong influence ($\beta = 0.478$, $p = 0.000$). These findings suggest that strengthening cybersecurity and risk management is crucial for improving digital service delivery in Murang'a County Government. This led to the rejection of null hypothesis **(H_{04})** and the conclusion was that digital security and resilience have significant influence on the service delivery of the Murang'a County Government. These results suggest that despite digital inclusion strategies contribute to service delivery, they are not as influential as other digital transformation strategies. Instead, county governments should focus on strengthening digital empowerment initiatives and security measures while leveraging e-government platforms to enhance service efficiency.

5.3 Conclusions

From the findings, it can be concluded that digital transformation strategies are critical in enhancing service delivery in Murang'a County Government. E-government services, digital empowerment strategies, and digital security and resilience measures significantly contribute to improved service efficiency, accessibility, and responsiveness. However, digital inclusion strategies, while relevant, were found to have a weaker influence on service delivery, suggesting the need for more targeted efforts in fostering digital accessibility and inclusivity. For instance, Murang'a County needs to invest in strengthening digital infrastructure, expanding ICT training, and ensuring broad-based public participation to optimize access of digital services by marginalized communities.

The study concludes that e-government services are instrumental in improving service accessibility and efficiency within Murang'a County. The availability of online platforms, mobile-accessible

services, and social media engagement has enhanced government responsiveness to citizen needs. However, inconsistencies in platform updates and digital literacy gaps may limit the full realization of these benefits. For e-government services to be more effective, Murang'a County should implement more platform enhancements, ensure user-friendly interfaces, and invest in public awareness campaigns to increase digital adoption. The integration of e-government services with other digital strategies will further enhance the county's service delivery by reducing bureaucratic inefficiencies and improving e-citizen interactions.

While digital inclusion strategies are intended to enhance equitable access to services, the findings suggest that their current implementation does not significantly influence service delivery. This highlights potential gaps in the effectiveness of outreach efforts, particularly in engaging marginalized groups such as women, youth, and persons with disabilities. Murang'a County should focus on bridging the digital divide by expanding internet access, improving digital literacy programs, and enhancing citizen engagement in governance. Strengthening these initiatives will ensure that digital transformation efforts are more inclusive and responsive to the needs of diverse populations, ultimately contributing to a more equitable service delivery framework.

The study further concludes that digital empowerment strategies are important for improving service delivery by improving the capacity of both employees and residents to engage with digital platforms. The findings suggest that ICT training, digital literacy programs, and partnerships with local organizations contribute significantly to increased digital adoption. However, variations in training effectiveness and accessibility indicate that not all stakeholders benefit equally from empowerment initiatives. To maximize impact, Murang'a County should implement structured digital literacy programs, tailor training sessions to different demographic groups, and leverage partnerships with private and non-governmental organizations to expand digital skills development. Investing in digital empowerment will ensure that citizens and government staff can effectively utilize e-government services, leading to more efficient and transparent service delivery.

Moreover, the study concludes that digital security and resilience measures are significant in ensuring the sustainability and reliability of digital service delivery in Murang'a County Government. Strong cybersecurity policies, data encryption measures, and risk management frameworks contribute to building public trust and minimizing service disruptions. The findings

highlight the importance of whistleblower protection mechanisms and automated systems in reducing corruption and enhancing accountability. However, variations in awareness and implementation suggest that some areas may require additional efforts to strengthen digital security frameworks. The county government should continue investing in cybersecurity training, conduct regular security audits, and develop comprehensive risk mitigation strategies to enhance the resilience of digital governance systems. By prioritizing digital security, the county can ensure that digital transformation efforts are sustainable, secure, and capable of delivering long-term benefits to residents

5.4 Recommendations

In view of the findings, the study recommends that Murang'a County Government and similar institutions should focus on strengthening the implementation of digital transformation strategies to enhance service delivery. Even though e-government services, digital empowerment, and security measures significantly contribute to improved service efficiency, it is necessary to ensure their consistent application and accessibility across all county departments. County governments should adopt a more integrated approach to digital governance, ensuring that digital strategies are user-centric and address real-time service delivery needs. Additionally, the study recommends investment in capacity-building initiatives, including ICT training for both employees and residents, as this will improve digital adoption and utilization. These efforts will improve overall service efficiency, minimize delays, and enhance government-citizen engagement.

From a policy perspective, the study recommends that county governments should consider developing and institutionalizing clear policies to enhance e-government services. Policies should focus on ensuring frequent updates to digital platforms, improving accessibility across multiple devices, and increasing citizen awareness of available e-government services. Additionally, policymakers should emphasize the importance of interactive digital engagement, mandating the use of social media, online portals, and feedback mechanisms to enhance responsiveness to citizen needs. Establishing policies that streamline digital transactions and minimize bureaucratic inefficiencies will further promote transparency and efficiency in public service delivery.

To strengthen digital inclusion, the county should implement targeted initiatives aimed at reducing the digital divide among marginalized groups such as women, youth, and persons with disabilities. This can be achieved through the expansion of public digital infrastructure, including community

internet access points and digital literacy programs tailored to different demographic groups. Additionally, the county should enhance citizen participation in governance by creating structured engagement forums where residents can contribute to decision-making processes. Strengthening digital inclusion policies will ensure that all residents have equal access to county services, thereby improving service equity and responsiveness.

For digital empowerment, the study recommends that Murang'a County Government establish structured ICT training programs for both employees and residents. Training should focus on enhancing digital skills, increasing awareness of e-government services, and improving user proficiency in digital platforms. Furthermore, the county should collaborate with private sector stakeholders, NGOs, and academic institutions to develop digital literacy campaigns that encourage greater adoption of online services. By strengthening digital empowerment strategies, the county can improve citizen engagement, enhance service efficiency, and maximize the benefits of digital transformation.

Furthermore, the study recommends that Murang'a County Government prioritize cybersecurity and resilience measures to ensure the sustainability of digital service delivery. The county should conduct regular security audits, implement robust data protection policies, and provide cybersecurity training for employees. Additionally, there is a need to enhance digital accountability by strengthening whistleblower protection mechanisms and automating service delivery processes to reduce opportunities for corruption. Investing in cybersecurity and risk management will not only safeguard sensitive information but also build public trust in digital services, ensuring long-term sustainability and efficiency in county service delivery.

5.5 Recommendation for Further Research

Based on the above findings, this study suggests that future research should explore the long-term impact of digital transformation strategies on overall governance efficiency and public service delivery. Even though this study examined the immediate effects of e-government services, digital inclusion, digital empowerment, and digital security measures, further studies should consider investigating how sustained digital adoption influences county-wide administrative performance over time. Additionally, this study did not incorporate either moderating or mediating variables; therefore, future research should examine potential moderators such as leadership commitment, regulatory frameworks, and citizen digital literacy in affecting the effectiveness of digital

transformation strategies.

Additionally, the current study found that e-government services, digital inclusion strategies, digital empowerment strategies, and digital security and resilience measures collectively explained 60.8% of the variation in service delivery, leaving 41.1% unexplained. Future research should strive to identify additional factors influencing service delivery, such as the role of financial investment in digital infrastructure, policy implementation effectiveness, and public-private partnerships in advancing digital transformation. Furthermore, investigating the integration of emerging technologies such as blockchain, artificial intelligence, and big data analytics in county governance could provide valuable insights into enhancing transparency, accountability, and efficiency in public service provision.

Moreover, future research should explore the impact of digital transformation strategies on citizen satisfaction and engagement with government services. While this study focused on service efficiency, further research should examine how digital adoption influences public trust in government institutions, digital literacy challenges, and disparities in service accessibility across different demographic groups. With the increasing use of digital platforms in governance, understanding the behavioral and social factors that drive or hinder digital service uptake would be essential. Examining these aspects will help county governments refine their digital transformation initiatives to ensure they are inclusive, user-friendly, and aligned with citizen expectations.

REFERENCES

Ahmed, V., Opoku, A., Olanipekun, A., & Sutrisna, M. (Eds.). (2022). Validity and reliability in built environment research: a selection of case studies. Taylor & Francis.https://doi.org/10.1201/9780429243226

Al-Emran, M., Mezhuyev, V., & Kamaludin, A. (2018). Technology Acceptance Model in M-learning context: A systematic review. Computers & Education, 125, 389-412.https://doi.org/10.1016/j.compedu.2018.06.008

Amirrudin, M., Nasution, K., & Supahar, S. (2021). Effect of variability on Cronbach's alpha reliability in research practice. Jurnal Matematika, Statistika dan Komputasi, 17(2), 223-230.https://doi.org/10.20956/jmsk.v17i2.11655

Anguche, C. A., Kimani, H., & Ndururi, J. (2024). E-Government Services and Performance of County Governments in Kenya: The Case of Nairobi City County. European Journal of Business and Strategic Management, 9(3), 1-30. https://doi.org/10.47604/ejbsm.2796

Ankrah, E., & Abah, M. (2020). Assessment of Usage and Impact of ICT Centres for Digital Inclusion in Ghana. Journal of Information Science, Systems and Technology, 4(3), 45-63. https://doi.org/10.5815/ijeme.2023.05.02

Barberio, B., Savarino, E. V., Black, C. J., & Ford, A. C. (2022). Placebo response rates in trials of licensed drugs for irritable bowel syndrome with constipation or diarrhea: meta-analysis. Clinical Gastroenterology and Hepatology, 20(5), e923-e944.https://doi.org/10.1016/j.cgh.2021.08.025

Bujang, M. A., Omar, E. D., Foo, D. H. P., & Hon, Y. K. (2024). Sample size determination for conducting a pilot study to assess the reliability of a questionnaire. Restorative dentistry & endodontics, 49(1).https://doi.org/10.5395/rde.2024.49.e3

Chisika, S. N., & Yeom, C. (2024). Enhancing E-government in Machakos and Nakuru Counties: Strategies for Sustainable Development in Kenya's Devolved Units. https://doi.org/10.13135/2384-8677/9394

Chohan, S. R., & Hu, G. (2022). Strengthening digital inclusion through e-government: cohesive ICT training programs to intensify digital competency. Information technology for development, 28(1), 16-38.https://doi.org/10.1080/02681102.2020.1841713

Commission of Revenue Allocation. (2023). Murang'a revenue rose by more than Sh100 million in the last financial year. https://cra.go.ke/

Costa, R. Z. F., Medina-Papst, J., Spinosa, R. M. D. O., Santo, D. L. D., & Marques, I. (2019). Content validity, reliability, and construct validity of a checklist for dive roll evaluation. Journal of Physical Education, 30, e3054.https://doi.org/10.4025/jphyseduc.v30i1.3054

Creswell, J. W. (2021). A concise introduction to mixed methods research. SAGE Publications.

Dearing, J. W., & Cox, J. G. (2018). Diffusion of innovations theory, principles, and practice. Health Affairs, 37(2), 183-190. https://doi.org/10.1377/hlthaff.2017.1104

Fox, G., & Connolly, R. (2018). Mobile health technology adoption across generations: Narrowing the digital divide. Information Systems Journal, 28(6), 995-1019. https://doi.org/10.1111/isj.12179

García-Avilés, J. A. (2020). Diffusion of innovation. The International Encyclopedia of Media Psychology, 1(8). https://doi.org/10.1002/9781119011071.iemp0137

Gupta, G., Tan, K. T. L., Ee, Y. S., & Phang, C. S. C. (2018). Resource-based view of information systems: Sustainable and transient competitive advantage perspectives. Australasian Journal of Information Systems, 22. http://dx.doi.org/10.3127/ajis.v22i0.1657

Hasan, N., Rana, R. U., Chowdhury, S., Dola, A. J., & Rony, M. K. K. (2021). Ethical considerations in research. Journal of Nursing Research, Patient Safety and Practice (JNRPSP), 1(01), 1-4. https://doi.org/10.55529/jnrpsp11.1.4

Hien, B. N. (2024). Digital Empowerment in Vietnam: How Public Sector Innovation Boosts Citizen Satisfaction. https://doi.org/10.62227/as/74218

Holtom, B., Baruch, Y., Aguinis, H., & A Ballinger, G. (2022). Survey response rates: Trends and a validity assessment framework. Human relations, 75(8), 1560-1584. https://doi.org/10.1177/00187267211070769

Hossain, S. T., Yigitcanlar, T., Nguyen, K., & Xu, Y. (2024). Local government cybersecurity landscape: A systematic review and conceptual framework. Applied Sciences, 14(13),

5501. https://doi.org/10.3390/app14135501

Huergo, E., & Moreno, L. (2023). Workforce age and technology adoption in small and medium-sized service firms. Research Policy.

International Labour Organization. (2024). New tools promote women and refugee inclusion in Kenya's digital economy.

Irungu, P. M. (2019). Assessing E-participation System Success: Case of Murang'a County (Doctoral dissertation, UoN).

Kabwe, K., Zhou, C., Jardim, L., & Surguladze, E. (2024). Empowering Societal Digital Transformation at the Local Level: A Case Study of Pemba Town Council. Digital Policy Studies, 3(1), 22-43.

Kimutai, G. K., & Aluvi, P. A. (2018). Good governance and service delivery: A study of citizen participation in Kisumu County.

Kumar, R., Sachan, A., & Mukherjee, A. (2023). Adoption of e-government services at different maturity levels: a qualitative study in India. Digital Policy, Regulation and Governance, 25(1), 15-39. http://dx.doi.org/10.1108/DPRG-02-2018-0007

Kurfalı, M., Arifoğlu, A., Tokdemir, G., & Paçin, Y. (2017). Adoption of e-government services in Turkey. Computers in Human Behavior, 66, 168-178.

Latupeirissa, J. J. P., Dewi, N. L. Y., Prayana, I. K. R., Srikandi, M. B., Ramadiansyah, S. A., & Pramana, I. B. G. A. Y. (2024). Transforming public service delivery: A comprehensive review of digitization initiatives. Sustainability, 16(7), 2818.

Lopes, A. S., Sargento, A., & Farto, J. (2023). Training in Digital Skills—The Perspective of Workers in the Public Sector. Sustainability, 15(13), 10577.

Luvanda, A. (2022). Bridging the Gender Divide in Digital Technology Courses and Careers in Kenya: A Policy Framework. Brookings Institution.

Maina, L. W., & Otieno, G. O. (2024). Leveraging Technology for Government Service Delivery: Suggestions for Securing the e-Citizen Service in Kenya. East African Journal of Information Technology, 7(1), 81-91.

Majchrzak, A., Markus, M. L., & Wareham, J. (2016). Designing for digital transformation. MIS

quarterly, 40(2), 267-278.

Mberi, T., Sevilla, J., Olukuru, J., Mutegi, L., & Weru, T. (2017, May). Challenges to the successful implementation of e-governance systems in Africa: A case of Taita Taveta County, Kenya. In 2017 IST-Africa Week Conference (IST-Africa) (pp. 1-8). IEEE.

Miller, R. L. (2018). Rogers' innovation diffusion theory (1962, 1995). In Technology adoption and social issues: Concepts, methodologies, tools, and applications (pp. 1558-1571). IGI Global.

Mujere, N. (2016). Sampling in research. In Mixed methods research for improved scientific study (pp. 107-121). IGI Global. http://dx.doi.org/10.4018/978-1-5225-0007-0.ch006

Mumporeze, N., & Prieler, M. (2017). Gender digital divide in Rwanda: A qualitative analysis of socioeconomic factors. Telematics and Informatics, 34(7), 1285-1293. http://dx.doi.org/10.1016/j.tele.2017.05.014

Mwangi, J. W. K. (2024). Drivers of Corruption and Public Service Delivery in Devolved Systems of Government: Case of Kiambu and Nairobi City Counties, Kenya (Doctoral dissertation, Kenyatta University). http://dx.doi.org/10.61426/sjbcm.v9i2.2346

Ngetich, B., & Migosi, J. (2023). Management Practices and Sustainability of Training Programs: A Case of Digital Skills Training Projects in Kibera Slums, Nairobi City County, Kenya. http://dx.doi.org/10.21013/jmss.v19.n3.p1

Nilsen, T., Gustafsson, J. E., & Blömeke, S. (2016). Conceptual framework and methodology of this report. Teacher quality, instructional quality, and student outcomes, 1. https://doi.org/10.1007/978-3-319-41252-8_1

O'Gorman, K., & MacIntosh, R. (2016). Research philosophy and paradigm. Research methods for accounting and finance, 59-80. http://dx.doi.org/10.23912/978-1-910158-88-3-3232

Onsomu, E., Munga, B., Nyabaro, V., & Munene, B. (2022). Employment Creation Potential for Youth in the Kenyan Economy. https://publication.aercafricalibrary.org/handle/123456789/3434

Park, Y. S., Konge, L., & Artino Jr, A. R. (2020). The positivist paradigm of research. Academic medicine, 95(5), 690-694. https://doi.org/10.1097/acm.0000000000003093

Pinto, A., & Leite, Â. (2023). The Relationship Between Digital Transformation and Digital Literacy. F1000Research.

Rahimi, B., Nadri, H., Afshar, H. L., & Timpka, T. (2018). A systematic review of the technology acceptance model in health informatics. Applied clinical informatics, 9(03), 604-634.https://doi.org/10.1055/s-0038-1668091

Reinholz, D. L., & Andrews, T. C. (2020). Change theory and theory of change: what's the difference anyway?. International Journal of STEM Education, 7, 1-12.https://doi.org/10.1186/s40594-020-0202-3

Ronoh, P. K. (2021). Transformational Leadership and Implementation of Digital Literacy Programme in Kenya (Doctoral dissertation, JKUAT-COHRED).

Rosenau, J. N. (2018). Turbulence in world politics: A theory of change and continuity. Princeton University Press.http://dx.doi.org/10.2307/2131602

Sataloff, R. T., & Vontela, S. (2021). Response rates in survey research. Journal of Voice, 35(5), 683-684. https://doi.org/10.1016/j.jvoice.2020.12.043

Scherer, R., Siddiq, F., & Tondeur, J. (2019). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. Computers & education, 128, 13-35. https://doi.org/10.1016/j.compedu.2018.09.009

Schneider, G. B. C. (2025). The Importance of Cybersecurity in Digital Government Implementations. COGNITIONIS Scientific Journal, 8(1), e585-e585.https://doi.org/10.38087/2595.8801.585

Singh, S., Sahni, M. M., & Kovid, R. K. (2020). What drives FinTech adoption? A multi-method evaluation using an adapted technology acceptance model. Management Decision, 58(8), 1675-1697.https://doi.org/10.1108/MD-09-2019-1318

Stratton, S. J. (2021). Population research: convenience sampling strategies. Prehospital and Disaster Medicine, 36(4), 373-374. doi:10.1017/S1049023X21000649

Telo, J. (2021). Privacy and cybersecurity concerns in Smart governance systems in developing countries. Tensorgate Journal of Sustainable Technology and Infrastructure for Developing Countries, 4(1), 1-13. http://dx.doi.org/10.30574/wjarr.2024.24.1.3170

Tuoi, N. T., & Thanh, N. N. (2023). The impact of digital capabilities on the work performance of provincial civil servants in Vietnam. Journal of Law and Sustainable Development, 11(4), e560-e560. https://doi.org/10.55908/sdgs.v11i4.560

Ugwu, J. N., Ugwuanyi, I. P., Asuma, M. N., Tushabe, H., Mabonga, E., & Tom, O. N. (2024). Impact of Digital Governance on Public Service Delivery in East Africa. IAA Journal of Arts and Humanities, 11(1), 18-29. http://dx.doi.org/10.59298/IAAJAH/2024/11.11829.11

Vasudevan, H. (2021). Resource-based view theory application to the educational service quality. International Journal of Engineering Applied Sciences and Technology,[S. l.], 6(6), 174-186. http://dx.doi.org/10.33564/IJEAST.2021.v06i06.026

Wahid, N., Arni, A., Arfah, S. R., Khatimah, A. K., & Lutfiah, A. U. R. (2024). Digital literacy-based community empowerment in the public service information system in Makassar City. Community Empowerment, 9(1), 37-43. https://orcid.org/0000-0001-6274-0424

Wairiuko, J. W., Nyonje, R., & Omulo, E. O. (2018). ICT infrastructure and adoption of E-government for improved service delivery in Kajiado County, Kenya. European Journal of Business and Management, 10(30), 205-221.

Wambugu, N. M. (2016). A Framework Towards Digital Inclusion. A Case Study of Kiambu County (Doctoral dissertation, University of Nairobi).

Wang, C., & Si, L. (2024). The intersection of public policy and public access: Digital inclusion, digital literacy education, and libraries. Sustainability, 16(5), 1878. https://doi.org/10.3390/su16051878

Weiner, B. J. (2020). A theory of organizational readiness for change. In Handbook on implementation science (pp. 215-232). Edward Elgar Publishing.https://doi.org/10.1186/1748-5908-4-67

Zvarimwa, C., & Zimuto, J. (2022). Valuable, rare, inimitable, non-substitutable, and exploitable (VRINE) resources on competitive advantage. International Journal of Business & Management Sciences, 8(1), 9-22. http://dx.doi.org/10.53555/ephbms.v8i1.1915

APPENDICES

Appendix I: Questionnaire

This survey intends to obtain data on Digital Transformation Strategies for Service Delivery in County Governments in Kenya: A Case of Murang'a County for a master's thesis.

SECTION A: DEMOGRAPHIC INFORMATION

Kindly tick (✓) on options that best describe you.

1. Indicate your gender: Male ☐ Female
2. ☐
3. Indicate Your Age: 20-29 Years☐ 30-39Years☐ 40-49Years☐ 50 and above ☐
4. Highest Academic Qualifications:

   Diploma ☐ Bachelor's degree ☐ Master's degree ☐ Doctorate ☐

Other (specify) _____

5. Position in the County government

   ☐ Member of CECs ☐ ICT staff ☐ ICT County Assembly Committee ☐ Head of Department ☐ County Employee ☐ County resident

6. Indicate your department in the bank……

SECTION II: DIGITAL INFORMATION STRATEGIES AND SERVICE DELIVERY

SECTION A: E-government Services and Service Delivery

This section has statements regarding E-government services and Service Delivery. Please tick (√) one cell for each statement. Use a scale of 1-5, given that Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree.

	Statements	**1**	**2**	**3**	**4**	**5**
1	The county uses various e-government platforms, including websites, social media, and online portals.					
2	E-government services are accessible on multiple devices, including mobile phones, computers, etc.					
3	The county government promptly responds to complaints or technical challenges hindering service accessibility.					
5	The county regularly updates its e-government platforms to					

	promote service delivery.					
6	County government officials often engage the public to explain the benefits of e-government services.					

SECTION B: Digital Inclusion and Service Delivery

This section has statements regarding Digital Inclusion and Service Delivery. Please tick (√) one cell for each statement using the same scale indicated above.

	Statement	**1**	**2**	**3**	**4**	**5**
1	Marginalized groups, such as women and youth, are actively included in discussions on service delivery priorities.					
2	The Muran'ga County government effectively engages all residents through transparent communication and feedback mechanisms.					
3	Citizens are actively involved in decision-making processes related to service delivery in Murang'a County.					
4	All residents have equal access to official information about county e-government services.					
5	The county has reliable customer support, such as online chat, a help desk, or a hotline for e-government services.					
6	The county governments facilitate internet connectivity and reliable networks to support e-government services in remote areas.					
7	The county has measures to ensure the accessibility of digital services to people with disabilities, such as screen					

	readers, easy navigation, and sign language support.					

SECTION C: Digital Empowerment and Service Delivery

This section has statements regarding Digital empowerment and Service Delivery. Please tick (√) one cell for each statement using the scale provided.

	Statement	**1**	**2**	**3**	**4**	**5**
1	The county provides adequate training on ICT infrastructure and e-government services to employees.					
2	The county provides regular and effective awareness programs to enhance residents' digital literacy on digital transformation platforms.					
3	The process of accessing e-government services is user-friendly and easy to understand.					
4	The county partners with local organizations to enhance awareness of digital services.					
5	Murang'a County provides access to digital resources like community training centres and public WIFI.					
6	The costs of using or accessing digital government services are reasonable and affordable to most citizens.					

SECTION D: Digital Security and Resilience and Service Delivery

This section has statements regarding Digital Security and Resilience and Service Delivery. Please tick (√) one cell for each statement using the scale provided.

	Statement	**1**	**2**	**3**	**4**	**5**
1	Murang'a County has robust cybersecurity policies to					

	protect its digital systems.					
2	The county government employs data encryption and security measures to protect citizens' digital transactions.					
3	The county government conducts frequent cybersecurity audits and training for staff on digital security practices.					
4	The county has backup systems and disaster recovery plans to prevent service disruptions and protocols in case of cyberattacks.					
5	The county government has a comprehensive whistleblower protection strategy for those reporting corruption.					
6.	Murang'a County has clear policies and automated services, minimizing human interactions and manipulation of the services, and reducing corruption.					

SECTION E: Service Delivery

Please complete the statements below following the same instructions. The questions are about the service delivery of county governments: A case study of Murang'a County.

	Statement	**1**	**2**	**3**	**4**	**5**
1	Murang'a County provides timely essential services and meets the expected delivery schedules.					
2	Most citizens within Murang'a County can easily access essential services.					
3	The quality of essential services provided by Murang'a County meets residents' expectations.					

4	Service delivery in Murang'a County is consistently efficient and effective across all sectors.					
5	The existing ICT infrastructure in the county has minimized corruption cases in service delivery.					
6	The existing ICT infrastructure in the county has minimized bureaucratic delays in service delivery.					

Appendix II: ERC Certificate

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MBA/2024/45585

4th April, 2025

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki Way, Upper Kabete,
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,

RE: NATHAN RUGUT – REGISTRATION NO. MBA/2024/45585

The purpose of this letter is to introduce the above named student who is pursuing **Master of Business Administration** in the department of **Accounting and Finance** in the school of **Business and Economics.**

The title of the research is **"Digital Transformation Strategies on Service Delivery of County Governments in Kenya: A Case Study of Murang'a County."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **April, 2025 and June, 2025.**

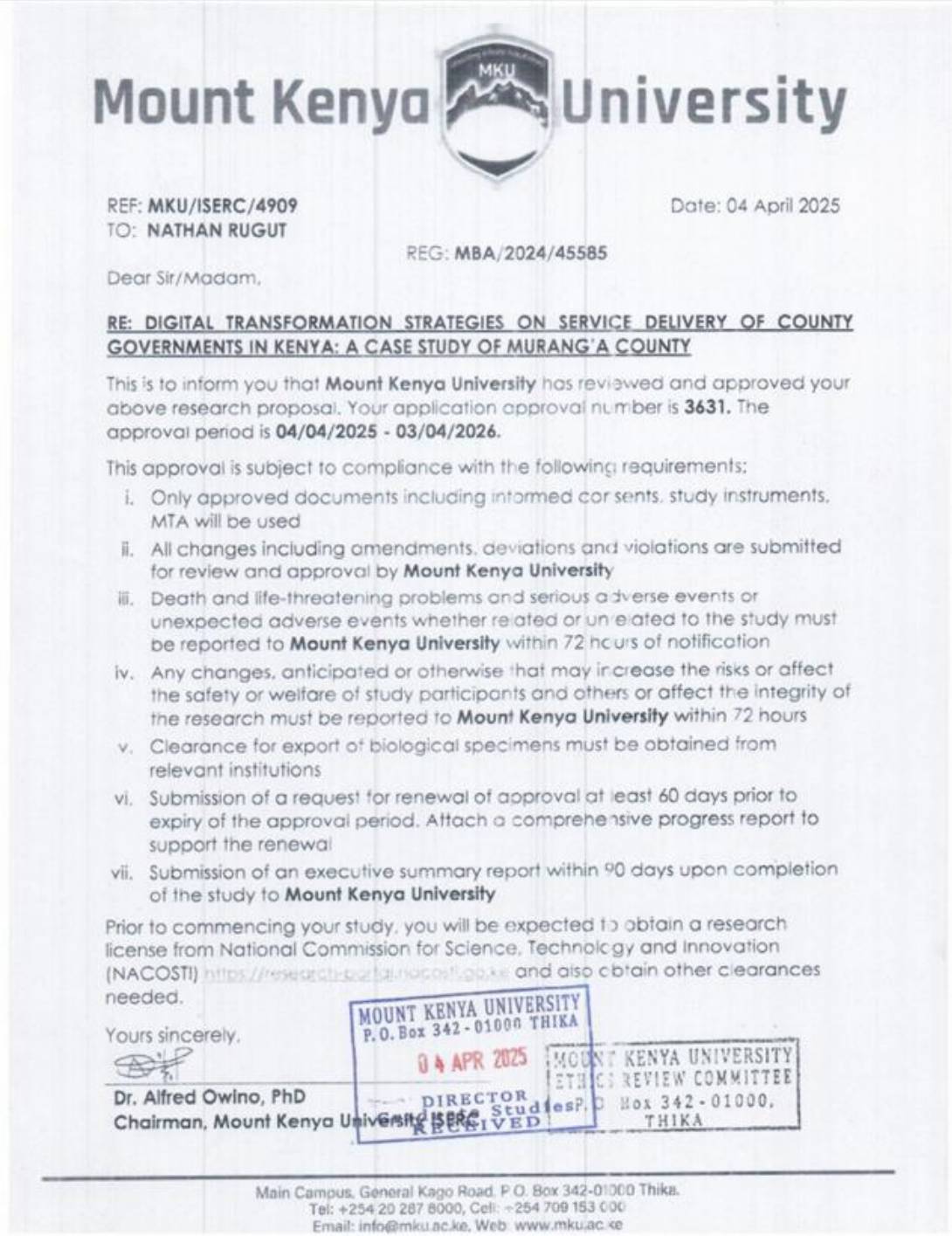
Any assistance accorded to the student will be highly appreciated.

Thank you.

Mount Kenya University
P.O. Box 342 - 01000, THIKA
Office of the Director,
Graduate Studies

Dr. Samuel M. Karemba, PhD
Director, Graduate Studies
Enc.

Appendix III: Introduction Letter from MKU



Mount Kenya University

REF: **MKU/ISERC/4909**
TO: **NATHAN RUGUT**

Date: 04 April 2025

REG: **MBA/2024/45585**

Dear Sir/Madam,

RE: DIGITAL TRANSFORMATION STRATEGIES ON SERVICE DELIVERY OF COUNTY GOVERNMENTS IN KENYA: A CASE STUDY OF MURANG'A COUNTY

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **3631.** The approval period is **04/04/2025 - 03/04/2026.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

MOUNT KENYA UNIVERSITY
P. O. Box 342 - 01000 THIKA
04 APR 2025
DIRECTOR Graduate Studies
RECEIVED

MOUNT KENYA UNIVERSITY
ETHICS REVIEW COMMITTEE
P. O Box 342 - 01000,
THIKA

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.
Tel: +254 20 287 8000, Cell: +254 709 153 000
Email: info@mku.ac.ke, Web: www.mku.ac.ke

Appendix IV: NACOSTI Research License

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **879000**

Date of Issue: **14/April/2025**

RESEARCH LICENSE

This is to Certify that Mr.. Nathan K Rugut of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Muranga on the topic: DIGITAL TRANSFORMATION STRATEGIES ON SERVICE DELIVERY OF COUNTY GOVERNMENTS IN KENYA: A CASE STUDY OF MURANG'A COUNTY for the period ending : 14/April/2026.

License No: **NACOSTI/P/25/4172521**

879000

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)

Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was the established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to.
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
    i. Endanger national security
    ii. Adversely affect the lives of Kenyans
    iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
    iv. Result in exploitation of intellectual property rights of communities in Kenya
    v. Adversely affect the environment
    vi. Adversely affect the rights of communities
    vii. Endanger public safety and national cohesion
    viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. Neither the license nor any rights thereunder are transferable.
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and Innovation(NACOSTI),
Off Waiyaki Way, Upper Kabete,
P. O. Box 30623 - 00100 Nairobi, KENYA
Telephone: 020 4007000, 0713788787, 0735404245
E-mail: dg@nacosti.go.ke
Website: www.nacosti.go.ke

Appendix V: Research Authorization

MKU/PG/F011

Mount Kenya University

SCHOOL OF POSTGRADUATE STUDIES

MKU/PG/F011: RESEARCH PROPOSAL CERTIFICATE OF CORRECTIONS

(NB: This Research Proposal Certificate of corrections should be submitted to the Dean, School of Postgraduate Studies for clearance before the Student proceeds to collect data)

PART I: CANDIDATE PARTICULARS

Name of candidate Dr./Mr./Ms ....NATHAN K. KUGUT....................

Registration No: ...MBA/2024/45585..........................

Department of study: ...STRATEGIC MANAGEMENT..................

Cell phone No: ...0712685774 / mba2024455856@mylife.mku.ac.ke

School: ..BUSINESS AND ECONOMICS..........................

Degree Title (MA, MED, PhD): ......MA..........................

Area of specialization: ...STRATEGIC MANAGEMENT..................

Title of Thesis: ...DIGITAL TRANSFORMATION STRATEGIES ON SERVICE DELIVERY OF COUNTY GOVERNMENTS IN KENYA; A CASE STUDY OF MURANGA COUNTY..........

Date of Presentation:..27/02/2025..........................

Signature of candidate: ....[signature].................... Date: 03/03/2025....

PART II: DECLARATION OF SUPERVISOR(S) OVERSEEING CORRECTION / REVISION

I/We, the undersigned supervisor(s) overseeing corrections of the research proposal as advised by the candidate's evaluation panel do hereby declare that all the corrections have been effected satisfactorily as required.

Any other remarks ....

.......Assist for his progression.......

....

....

51

Names of Supervisors	Signature	Date
1. Dr. George Njenga		03/03/25
2.		
3.		

PART III: CONFIRMATION BY THE CAMPUS/ SCHOOL POSTGRADUATE COORDINATOR

I hereby do confirm that the supervisor(s) appointed to oversee the candidate effect the corrections on the research proposal have done so as per the instructions of the candidate's evaluation panel.

Any other remarks

Approved The Student Shall Continue.

Name of Coordinator: Dr. Isaac Aburga

Signature for Date 24/03/2025

Stamp

PART IV: CONFIRMATION BY THE DEAN OF THE RELEVANT SCHOOL

I hereby do confirm that the supervisor(s) appointed to oversee the candidate effect the corrections on the research proposal have done so as per the instructions of the candidate's evaluation panel.

Any other remarks

Approved

Name of Dean Dr. Njeru

Signature

School Stamp

Mount Kenya University P.O. Box 342-01000 THIKA 24 MAR 2025 DEAN, SCHOOL OF BUSINESS & ECONOMICS

PART V: CLEARANCE BY THE UNIVERSITY ETHICAL REVIEW COMMITTEE

The candidate will be issued with a Certificate of Ethical Clearance by the Directorate of Research and Development.

PART VI: COMMENTS BY THE DEAN SCHOOL OF POSTGRADUATE STUDIES

The candidate is granted/not granted permission to proceed to the field to collect data (delete where applicable)

NB: One (1) copy of the corrected/revised research proposal should accompany this certificate of corrections

Name of Dean ..... Dr. Samuel M. Kavenga .....

(School of Postgraduate Studies)

Signature ..... Date 4/4/2025

School Stamp .....

Mount Kenya University
P.O. Box 342-01000, THIKA
Office of the Director,
Graduate Studies

Appendix VI: Turnitin Report

DIGITAL TRANSFORMATION STRATEGIES ON SERVICE DELIVERY OF COUNTY GOVERNMENTS IN KENYA: A CASE STUDY OF MURANG'A COUNTY

by Nathan Rugut

Submission date: 02-May-2025 09:40AM (UTC+0300)
Submission ID: 2664031331
File name: NATHAN_COMPLETE_PROJECT.docx (183.55K)
Word count: 27230
Character count: 169657

DIGITAL TRANSFORMATION STRATEGIES ON SERVICE DELIVERY OF COUNTY GOVERNMENTS IN KENYA: A CASE STUDY OF MURANG'A COUNTY

ORIGINALITY REPORT

19%	18%	9%	12%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Kenyatta University Student Paper	1%
2	ir-library.ku.ac.ke Internet Source	1%
3	Submitted to Mount Kenya University Student Paper	1%
4	ikesra.kra.go.ke Internet Source	1%
5	ir.jkuat.ac.ke Internet Source	1%
6	su-plus.strathmore.edu Internet Source	1%
7	Submitted to KCA University Student Paper	1%
8	erepository.uonbi.ac.ke Internet Source	<1%
9	repository.kemu.ac.ke:8080 Internet Source	<1%
10	erepository.uonbi.ac.ke:8080 Internet Source	<1%

Appendix VII: Research Site Map