

Journal of Public Policy & Governance



Moderating Role of Government Policy on the Relationship Between Digital Transformation Practices and Public Service Delivery Effectiveness: An Empirical Investigation of Huduma Centres in Nairobi Metropolitan Area, Kenya

Maxwell Okeyo, Dr. Justice Nzioki & Dr. Sylvia Tuikong

ISSN: 2616-8413

Moderating Role of Government Policy on the Relationship Between Digital Transformation Practices and Public Service Delivery Effectiveness: An Empirical Investigation of Huduma Centres in Nairobi Metropolitan Area, Kenya

^{1*}Maxwell Okeyo, ²Dr. Justice Nzioki & ³Dr. Sylvia Tuikong

¹PhD student, Daystar University

^{2&3}Lecturers, Daystar University

*Email of the corresponding author: maxokeyo@gmail.com

How to cite this article: Okeyo, M., Nzioki, J., & Tuikong, S. (2026). Moderating Role of Government Policy on the Relationship Between Digital Transformation Practices and Public Service Delivery Effectiveness: An Empirical Investigation of Huduma Centres in Nairobi Metropolitan Area, Kenya. *Journal of Public Policy & Governance*, 10 (2), 57-79. <https://doi.org/10.53819/81018102t5426>

Abstract

The study examined the moderating effect of government policy on the relationship between digital transformation practices, namely technological infrastructure, digital competencies, and process automation, and public service delivery effectiveness among Huduma Centres in the Nairobi Metropolitan Area, Kenya. The research was based on a pragmatic philosophical paradigm and informed by institutional theory. An explanatory mixed-methods approach was adopted and the population was 13,796 respondents in nine Huduma Centres in Nairobi, Kiambu, Machakos and Kajiado counties. A stratified sampling approach based on Cochran's formula provided a sample of 549 respondents. Primary data were collected using semi-structured questionnaires, reliability and validity were ensured using Cronbach's alpha, factor analysis and expert validation. Quantitative data were analysed with descriptive statistics, Pearson correlation and hierarchical regression according to the three-step moderation model of Baron and Kenny, and qualitative data were analysed with thematic analysis. The study found that digital transformation practices collectively explained 62.1% of the variance in service delivery effectiveness ($R^2 = 0.621$, $F = 73.282$, $p = 0.000$). Government policy significantly moderated the relationship between digital transformation practices and service delivery effectiveness, increasing explanatory power from 66.9% to 81.6% when interaction terms were introduced, representing a 14.7 percentage point increase ($R^2 = 0.816$, $F = 82.214$, $p = 0.000$). The strongest interaction effect was observed between process automation and government policy ($\beta = 0.495$, $p = 0.000$). Qualitative findings confirmed that centres with stronger Masterplan alignment reported better resource availability and more consistent service quality, while unequal budget allocations and low enforcement capacity constrained policy's direct influence. The study concludes that government policy is a significant institutional moderator that amplifies the effectiveness of digital transformation practices on public service delivery effectiveness, yet systematic gaps in enforcement, funding, and compliance monitoring require immediate institutional intervention. The study recommends that the Ministry of ICT strengthen Masterplan accountability frameworks, that the ICT Authority establish dedicated policy compliance monitoring mechanisms, and that the National Treasury introduce performance-based funding incentives to ensure consistent and equitable policy-driven digital transformation outcomes across all Huduma Centres.

Keywords: *Government policy, Digital Transformation Practices, Public Service delivery effectiveness Huduma Centres in Kenya*

<https://doi.org/10.53819/81018102t5426>

1.0 Background to the Study

The relationship between government policy and the delivery of services to the population has long been a central concern in governance scholarship. Nonetheless, its specific role as a mediator in the relationship between digital transformation and service delivery remains comparatively underexplored within the framework of institutional theory. Government policy, which can be understood as the official strategic guidelines, regulatory frameworks, and administrative guidelines that governmental institutions have developed to align organisational practices, does not simply predetermine the scale of its impact on service delivery, but it actually influences the scale of its impact on service delivery effectiveness (Myovella et al., 2020; Sharma et al., 2023). Cordella and Paletti (2019) theorise government policy as statutory tools to facilitate systematic implementation of technological programs, whereas Sharma et al. (2023) theorise it as formalised regulatory tools to facilitate efficient service delivery. With governments spending on digital masterplans and e-government structures, policy has become the key driver by which infrastructure, competency, and automation investments can be converted into quantifiable service delivery effectiveness benefits to citizens.

The fact that legislative and policy frameworks increase the payoffs of digital transformation investments in the public administration is strong across the world. Countries that have well-developed, consistent regulatory frameworks always do better than those that have disjointed or poorly implemented digital governance systems. Comparative analysis of twenty-seven member states in the European Union revealed that countries with well-developed legislative frameworks scored much higher on e-government maturity with an average of 0.82 on the EU digital index (Wirtz et al., 2022). Janssen and Van den Hoven (2021) showed between OECD countries that higher levels of service innovation were strongly predicted by responsive policy environments ($R^2 = 0.41$, $p < 0.05$), which confirmed the idea that policy responsiveness is a structural amplifier of digital performance. Gil-Garcia et al. (2020) determined through a qualitative review of twelve countries in Latin America that operational efficiency and long-term citizen participation were fostered by inclusive and well-enforced legislative frameworks and hindered by fragmented frameworks.

The policy moderating effect on the outcomes of digital transformation and service delivery effectiveness has been reported in a number of governance settings in Africa, but there are still large gaps in implementation. Ojo et al. (2021) conducted a case study in South Africa and discovered that the key obstacles to successful e-government implementation were fragmented legislative mandates and poor intergovernmental coordination, which validated that policy incoherence is a direct limitation on the quality of digital services. Bwalya and Mutula (2022) determined through cross-sectional survey of 400 civil servants in Zambia and Botswana that clear legislative direction was strongly and positively related to digital uptake ($b = 0.62$), showing that policy clarity is one of the strongest predictors of digital transformation success in the public administration of developing countries. All these African results point to the fact that consistent, well-funded, and well-implemented policy frameworks are the key determinants of whether digital investments will lead to better outcomes in terms of improved public services.

In Kenya, there has been increasing empirical interest in the moderating role of policy frameworks in the process of digital transformation and service delivery. Karama (2022) used hierarchical regression in eight counties in Kenya and found that the legal framework had a significant moderating effect on the relationship between strategic planning and service delivery, highlighting the conditional and subtle nature of the role of policy. Qualitative

<https://doi.org/10.53819/81018102t5426>

analysis of fifteen counties revealed that the Kenya Digital Masterplan 2022-2032, despite its good strategic vision, was weakened by unequal funding, lack of awareness among stakeholders, and lack of effective enforcement mechanisms, with counties with higher compliance registering better digital results ($p = 0.032$). Chewa, Minja, and Njoroge (2023) also established through a correlational study of 380 respondents in the energy sector enterprises of Kenya that policy compliance played a significant role in service efficiency, which supports the fact that institutional policy environments do not only affect transformation outcomes based on the technological variables.

Kenya Digital Masterplan 2022-2032, published by the Ministry of ICT, is the most detailed policy commitment by the government to accelerate the digital transformation of all state institutions, which outlines the strategic directives of infrastructure development, e-government implementation, ICT capacity building, and transformation of the digital economy (ICT Authority, 2022). In the context of Huduma Centres, the influence of the Masterplan is at the corporate strategic level, offering general direction, and at the functional level, determining the allocation of resources, compliance levels, and implementation procedures (Li et al., 2023; Sharma et al., 2023). The Auditor General (2023) and ICT Authority (2022) both have reported implementation lapses, funding deficits, and lagging rollout that have hampered the desired effect of the Masterplan, and which has also shown a continued difference between high-level policy design and actual service delivery effectiveness results at locations of the Huduma Centre.

Although the role of government policy as a moderator is recognised, the majority of empirical studies focus on its role alone, as opposed to investigating its interaction with a variety of variables of digital transformation at the same time. Njuguna and Karimi (2025) validated hierarchical regression of 200 public managers that alignment with Kenya Digital Masterplan had a significant impact on digital platform effectiveness on service delivery effectiveness (R^2 change = 0.11, $p < 0.05$), but did not include digital competencies and process automation. Mutuku, Wamuyu, and Oduor (2023) also determined that policy frameworks had a strong moderating effect on Kenyan digital service transformation, but did not disaggregate the particular interaction effects between policy and individual transformation constructs. Such constraints affirm that there is a major methodological and conceptual gap in the comprehension of how the government policy particularly moderates the individual and combined impacts of technological infrastructure, digital capabilities, and process automation on service delivery effectiveness outcomes at Huduma Centres.

The implementation of the Kenya Digital Masterplan 2022-2032 in the Huduma Centres of the Nairobi Metropolitan Area offers a distinctively applicable setting to analyze the government policy as a moderating factor. The ongoing discrepancy between the Masterplan grand digital transformation targets and the reality of operations at individual centres, where implementation, funding, and institutional fit are disproportionate, has been reported in studies by Nyamai and Njoroge (2021), Bukhala and Njoroge (2021), and Kimemia and Amuhaya (2023). The centres like the Huduma GPO and Huduma Makadara have high demand, and the differences in infrastructure, competency, and the level of automation between urban and peri-urban areas have been documented, which provides a perfect setting to test whether greater policy alignment enhances service delivery effectiveness returns of each digital transformation practice. The paper assessed the moderating role of government policy on the relationship between digital transformation practices and delivery of public services in nine Huduma Centres in the Nairobi Metropolitan Area.

<https://doi.org/10.53819/81018102t5426>

1.1 Statement of the Problem

The Huduma Centres in Kenya, which were created as a one-stop service centre, were a representation of the government in its digitally enabled public administration by centralizing access to key government services like issuing identity cards and tax compliance (Latupeirissa et al., 2024; Setyawan, 2024). Even with this vision, the centres have been struggling with chronic service delivery effectiveness issues that are typified by inaccessibility, long queues, and poor citizen satisfaction (Nurfadilah et al., 2024; Sihombing et al., 2024). One of the key yet empirically under-researched aspects of these failures is the degree to which the government policy, namely the Kenya Digital Masterplan 2022-2032, is effective in mediating the relationship between digital transformation practices and service delivery effectiveness outcomes. The possible advantages of technological infrastructure, digital capabilities, and process automation are not realised when the policy frameworks are weakly implemented or do not correspond with the realities of the institutions, which continues to create service inequalities and undermine the trust of the population (Filgueiras et al., 2019; Nurfadilah and Haliah, 2024).

The inefficiencies that have been experienced by Huduma Centres since their inception in 2013 have been fuelled by the increasing service demand that has surpassed the logical execution of digital transformation initiatives (Koech et al., 2023; Sihombing et al., 2024). To solve these inefficiencies, it is necessary to not only invest in infrastructure, automation, and digital skills but also a strong policy environment that directs, coordinates, and maintains such activities (Kirana & Majid, 2022). Nevertheless, the majority of empirical research on the digital transformation of the public service has been performed in the context of developed countries, which has left considerable gaps in terms of how the government policy mediates the effects of transformation in the context of Kenya, which has a devolved system of governance (Kasmiah et al., 2024; Khisro, 2020). Moreover, the current literature has focused on the government policy as a direct factor of service delivery effectiveness instead of a moderating factor that enhances or limits the effectiveness of digital transformation practices, which is a major conceptual gap (Latupeirissa et al., 2024; Odhiambo et al., 2019).

The Kenya Digital Masterplan 2022-2032 operationalization was to be used to speed up the digital transformation and enhance service delivery effectiveness in the public institutions (Koech and Bett, 2023; Latupeirissa et al., 2024). However, the level of effectiveness of this framework in improving digital transformation in Huduma Centres is underresearched, which is a gap in knowledge and practice (Larasati et al., 2022; Setyawan, 2024; Sihombing et al., 2024). The consequences of inappropriate policy such as decreased government income, lower citizen satisfaction, and the further increase of inequalities require strict research (Filgueiras et al., 2019; Nurfadilah and Haliah, 2024). These empirical, contextual, and conceptual gaps are critical to fill in the knowledge gap that is in line with Kenya Vision 2030 and Sustainable Development Goals (Li et al., 2024; Nurfadilah et al., 2024). The paper thus examines how the government policy moderates the relationship between digital transformation practices and delivery of public services in nine Huduma Centres within the Nairobi Metropolitan Area.

1.2 Research Objective

To examine the moderating effect of government policy on the relationship between digital transformation practices and service delivery effectiveness among Huduma Centres in Nairobi Metropolitan Area, Kenya.

1.3 Hypothesis

H₀: There is no statistically significant moderating effect of government policy on the relationship between digital transformation practices and service delivery effectiveness among Huduma Centres in Nairobi Metropolitan Area, Kenya.

2.0 Literature Review

The literature review is critical to determining the existing knowledge and in the chapter included theoretical review, empirical review and conceptual framework.

2.1 Theoretical Review

The study was anchored on the institutional theory. The theory was introduced by Meyer and Rowan (1977) and later developed by DiMaggio and Powell (1983). It was considered suitable for this study because it explains the role of government policy in mediating the relationship between digital transformation practices and public service delivery. The theory states that organizations adapt to external pressures to achieve legitimacy. These pressures include coercive, normative, and mimetic forces (Alharbi et al., 2021; Wei et al., 2022). In this study, the Kenya Digital Masterplan 2022–2032 represents a coercive institutional force. It influences the adoption and implementation of digital transformation practices such as technological infrastructure, digital competencies, and process automation in Huduma Centres. The theory is directly applicable to this study. It explains how policy requirements can enhance or limit the effectiveness of digital transformation. It also shows how regulatory compliance is linked to service delivery outcomes. These outcomes include accessibility, timeliness, and user satisfaction across Huduma Centres.

The applicability of the Institutional Theory to the research is also supported by the fact that it has been used in the research on digital governance and transformation in the public sector. According to Tolbert et al. (2021), the digital transformation of government sectors is usually externally motivated by national digitalisation strategies and legislative needs, which is directly related to the coercive forces of the Institutional Theory. Gupta et al. (2023) affirm that institutional support in the form of legal requirements boosts the assimilation of digital practices like process automation and e-governance platforms, which make it timely and satisfactory to citizens. The Digital Masterplan 2022-2032 is the institutional guide in the context of Kenya, which facilitates and limits the transformation efforts in the operations of the Huduma Centre (Battilana et al., 2017). This institutional logic is confirmed by Njuguna and Karimi (2025) who show that Masterplan alignment greatly enhanced the impact of digital practices on service delivery, which proves that Institutional Theory is the theoretical framework that will be used to analyze the moderating role of government policy in the study.

2.2 Empirical Literature Review

Government policy is both a facilitator and a controller of digital transformation, which influences the institutional context in which government agencies implement technology-based solutions. Laws put in place guidelines on how data is handled, cybersecurity, access to services, and accountability of institutions, so that the digital transformation practices are conducted within ethical, secure, and inclusive boundaries. In the context of Kenya and the Huduma Centres, the strategic direction of digital practices in terms of national service delivery effectiveness is guided by legislative tools, including the Kenya Digital Masterplan 2022-2032. However, the degree to which the policy of the government softens the connection between the practices of digital transformation and service delivery effectiveness is not well studied in the

<https://doi.org/10.53819/81018102t5426>

Kenyan and global empirical literature. Gil-Garcia et al. (2020) also performed a qualitative policy review of twelve countries in Latin America and discovered that coherent and comprehensive legislative frameworks facilitated long-term citizen participation and operational effectiveness, whereas fragmented systems suppressed digital development, which validated that policy coherence was the key to sustainable transformation of public services.

Wirtz et al. (2022) examined secondary data of twenty-seven European Union member states in Europe and found that countries with well-developed legislative frameworks, especially those that adopted GDPR, scored higher on e-government maturity with an average score of 0.82 on the EU digital index, which validates that effective policy improves digital efficiency and citizen trust. This was supplemented by Janssen and Van den Hoven (2021) who performed mixed-method analysis of policy audits and interviewed forty public officials in OECD countries and found that responsive policy environments were a significant predictor of greater levels of public service innovation ($R^2 = 0.41$, $p < 0.05$). Taamneh, Haija, and Taamneh (2023) used the Generalised Least Squares analysis in four large cities and found that governance practices had a positive effect on perceived service quality and that trust in government enhanced this association. All these findings in the global context confirm that the quality, responsiveness, and coherence of legislative frameworks are strong structural moderators of the outcomes of digital transformation in the field of public administration.

Empirical evidence in Sub-Saharan Africa has continuously supported the idea that the effectiveness of digital transformation in the delivery of public services is directly related to the strength and coordination of policy frameworks. Ojo et al. (2021) used a case study analysis with stakeholder questionnaires and policy document reviews in South Africa and determined that the main obstacles to successful e-government implementation were fragmented legislative mandates and lack of intergovernmental coordination. Bwalya and Mutula (2022) cross-sectional survey ($n=400$ civil servants) of Zambia and Botswana revealed that clear legislative direction was also significantly related to digital uptake ($b = 0.62$), and policy clarity is one of the strongest predictors of digital governance success. Chewa, Minja, and Njoroge (2023) also determined through correlational analysis of 380 participants that policy compliance and contextual moderators were significant determinants of service efficiency, which confirms that institutional policy environments determine the outcome of transformation not only through technological variables but also through policy compliance and contextual moderators.

In Kenya, policy frameworks have a moderating effect on the digital transformation and service delivery, and this has increasingly been subject to empirical investigation. Karama (2022) used hierarchical regression in eight counties, which showed that the legal framework was a significant moderator of the relationship between strategic planning and service delivery, but the research was based on quantitative data without considering the contextual nuances. Njoroge and Mwangi (2023) examined fifteen counties with the help of qualitative review and semi-structured interviews and found that the implementation of the Kenya Digital Masterplan was limited by unequal funding, low awareness of stakeholders, and poor enforcement, with counties with higher compliance levels showing much more positive digital results ($p = 0.032$). Mutuku, Wamuyu, and Oduor (2023) also determined using Kenyan evidence in the public sector that policy frameworks had a strong moderating role in the digital service transformation, but their framework did not disaggregate individual interaction effects between policy and individual transformation constructs.

The latest data on government policy moderation in Kenya is the research on the context of Huduma Centre. Njuguna and Karimi (2025) used hierarchical regression on 200 managers of

<https://doi.org/10.53819/81018102t5426>

public services and found that the impact of ICT infrastructure on service delivery effectiveness was significantly enhanced by alignment with Kenya Digital Masterplan 2022-2032 (R2 change = 0.11, $p < 0.05$), which proves that legislative coordination maximises the returns of digital transformation. Altogether, the analysed articles confirm that government policy can influence the direction of digital transformation by affecting organisational priorities, regulatory compliance, and accountability frameworks. However, the majority of studies do not go further to empirically test the moderating effect of policy on several variables of digital transformation at the same time. The paper fills these conceptual, methodological, and empirical gaps by discussing how the government policy, operationalised through the Kenya Digital Masterplan 2022-2032, moderates the joint relationship between technological infrastructure, digital competencies, process automation, and service delivery effectiveness in the nine Huduma Centres of the Nairobi Metropolitan Area.

2.3 Conceptual Framework

A conceptual framework refers to the structured representation of the key concepts and variables in a study and the presumed relationships among them. Figure 1 below presents the conceptual framework for this study.

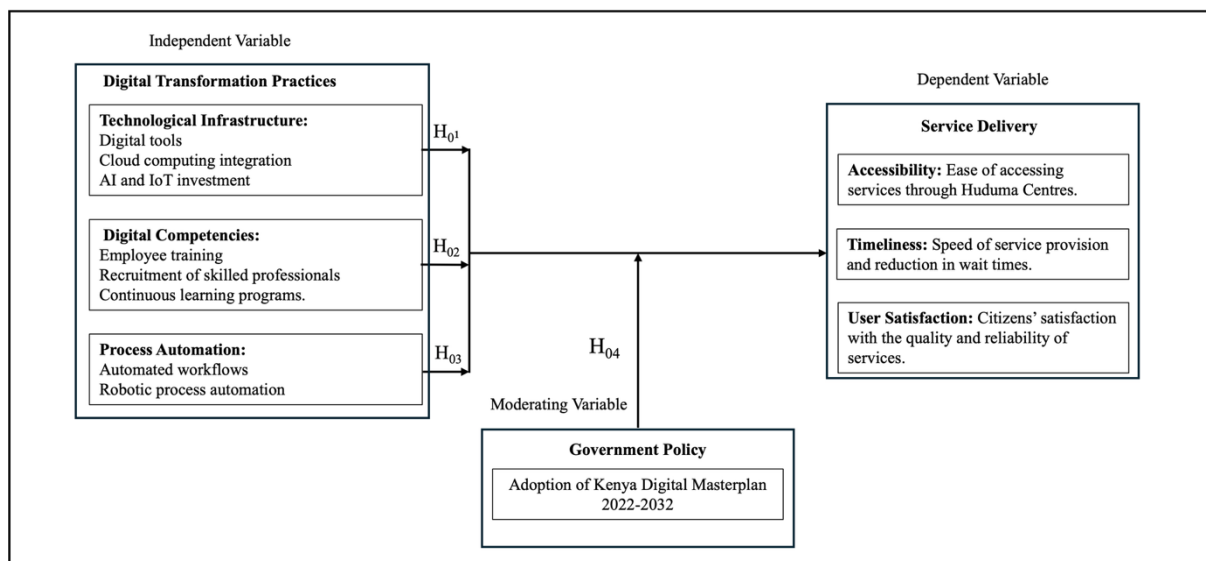


Figure 1: Conceptual Framework

3.0 Research Methodology

The research was based on a pragmatic philosophical orientation, which informed methodological decisions by focusing on contextual relevance, practical problem-solving, and methodological pluralism (Clarke & Visser, 2019). Pragmatism was especially suitable in analyzing the moderating role of government policy on the digital transformation and service delivery effectiveness in the context of the Huduma Centres, where the interaction between the institutional policy directives, organisational behaviour, and the reality of policy implementation demanded both quantitative moderation testing and qualitative contextualization of policy implementation realities. The explanatory mixed-methods design was chosen, which allowed collecting both quantitative and qualitative data at the same time with a primary focus on the quantitative one. This design allowed statistical testing of the interaction effects between government policy and digital transformation practices and qualitative data complemented those results by reflecting the perceptions of stakeholders

<https://doi.org/10.53819/81018102t5426>

regarding the policy alignment and implementation gaps (Creswell & Plano Clark, 2019). A stratified sample of 549 respondents in nine Huduma Centres in Nairobi, Kiambu, Machakos and Kajiado counties was used to administer semi-structured questionnaires.

The population of the study consisted of 13,796 people in nine Huduma Centres within the Nairobi Metropolitan Area and 296 employees who were stratified into managers, heads of department, and senior management and 13,500 customers. The stratified sampling was used to provide proportional representation, and sampling error was reduced (Baughan et al., 2023; Reddy & Khan, 2023). The sample of 549 respondents was chosen according to the formula of Cochran (1977), there were 169 employees and 380 customers. Descriptive statistics, Pearson correlation, and hierarchical regression were used to analyse quantitative data in accordance with the three-step moderation model proposed by Baron and Kenny (1986) with the model

$$Y = \beta_0 + \beta_1 X + \beta_2 Z + \beta_3 (X \times Z) + \varepsilon$$

Where:

X: Composite index of Digital Transformation Practices

Z: Government Policy

X×Z: Interaction term Y: Service Delivery

The thematic analysis was applied to qualitative data to put statistical results into context. Daystar University ISERC and NACOSTI provided ethical approvals, and participant confidentiality, informed consent and full adherence to Kenya Data Protection Act 2019 were upheld in the research process.

4.0 Introduction

This chapter presents the data presentation, analysis and discussion of findings.

4.1 Pretesting of the Research Instrument

Pretesting of the research instrument was carried out at Huduma Centre Nakuru and Huduma Centre Naivasha with 17 employees and 38 customers, for a total of 55 respondents, representing ten percent of the planned sample for the main study, and deliberately excluded to maintain the integrity of the findings. The main goal was to establish validity and reliability of questionnaire items measuring government policy, digital transformation practices and service delivery. Construct validity was measured with the help of Kaiser-Meyer-Olkin measures and Bartlett's Test of Sphericity. Government policy and digital competencies had the highest KMO values of 0.735 and 0.740 respectively which are substantially higher than the aggregate of 0.620, confirming exceptionally high sampling adequacy. Technological infrastructure, accessibility and user satisfaction performed at or near the aggregate, while process automation had the lowest KMO of 0.422, but still within the minimum acceptability criterion. The aggregate Bartlett's Test significance of 0.006 confirmed suitability of the entire data set for factor analysis for all seven constructs measured.

Factor analysis supported construct validity for all seven variables with all 21 items in the questionnaire having extraction values greater than the recommended 0.4 threshold (Stevens, 2002). Government policy items had extraction values ranging from 0.879 to 0.907, which were consistently higher than the aggregate of 0.864, confirming the best performance for construct validity. Technological infrastructure had the highest individual item loadings of 0.899 to 0.989. Digital competencies were 0.863-0.940 and process automation had the highest variability with one item at 0.611, indicating possible future refinement. Service delivery effectiveness items across accessibility, timeliness and user satisfaction achieved extraction

<https://doi.org/10.53819/81018102t5426>

values between 0.806 and 0.909. Reliability assessment based on Cronbach's alpha showed that all constructs were above the 0.7 threshold set by Nunnally (1978) with government policy having the highest coefficient of 0.935, digital competencies at 0.931, technological infrastructure at 0.897 and the overall aggregate at 0.842, which validated all 21 items for retention in the main study.

4.2 Response Rate

A total of 518 questionnaires were distributed, out of which 479 were duly completed and returned, representing a 73.2 percent response rate. The remaining 39 questionnaires, equivalent to 7.5 percent, were not returned. To ensure consistency, both frequencies (n) and percentages (%) have been reported across all categories in this and subsequent descriptive tables. The figures represent respondents, not services, as the analysis was based on the number of participants who successfully completed and returned the research instrument. This high response rate demonstrates strong participant engagement and enhances the reliability and representativeness of the data collected.

Table 1: Response rate

Category	Target Respondents	Actual Respondents	Response Rate (%)
Pretest (Nakuru)	55	55	100%
Main Study	549	402	73.2%
Employees	169	138	81.7%
Customers	380	264	69.5%

Source: Field Data (2025)

The study employed rigorous methodological procedures, including pretesting to validate research instruments. The pretest was conducted at Huduma Centres in Nakuru County with 55 respondents (17 employees and 38 customers), achieving a 100% response rate. This complete participation during pretesting eliminated non-response bias in instrument validation and confirmed that the questionnaire design was accessible to both employee and customer groups. For the main study, the sample size of the study was 549 respondents across nine Huduma Centres in the Nairobi Metropolitan Area, comprising Nairobi, Kiambu, Machakos, and Kajiado counties. The study demonstrated strong participant engagement with a robust response rate among both employees and customers in the public service delivery effectiveness centers. Participants achieved a 73.2% response rate with 402 respondents out of the targeted 549 individuals, comprising 138 employees (81.7% response rate from 169 targeted) and 264 customers (69.5% response rate from 380 targeted), representing solid participation given the operational nature of digital transformation research in active service delivery effectiveness environments.

The employee response rate of 81.7% was notably higher than the customer response rate of 69.5%, reflecting the greater accessibility and engagement of staff compared to transient service users. The overall 73.2% response rate exceeds widely accepted thresholds for survey research validity and generalizability. According to Babbie (2016), response rates above 50% are considered adequate for analysis and reporting, while rates above 60% are considered good, and those above 70% are considered very good for social science research. Similarly, Dillman et al. (2014) note that response rates above 60% are sufficient to provide adequate statistical

<https://doi.org/10.53819/81018102t5426>

analysis. Nulty (2008) further supports that response rates above 60% minimize non-response bias and enhance the reliability of findings in educational and organisational research contexts.

This 73.2% response rate minimizes selection bias and enhances the reliability of findings within the specific context of public sector employees and service users in Kenya's metropolitan region. The response rate provides sufficient statistical power for meaningful analysis of digital transformation practices effectiveness, service delivery effectiveness performance assessment, and Pearson correlation analysis and regression analysis between technological infrastructure, digital competencies, process automation and service delivery effectiveness outcomes. The participation demonstrates that digital transformation research was considered relevant and important by managers, heads of departments, senior management, and customers across different service categories, supporting the validity of conclusions drawn about digital transformation impact and the role of government policy on service delivery effectiveness among this population of public sector stakeholders in both urban and peri-urban settings within the Nairobi Metropolitan Area.

4.3 Descriptive Statistics

The descriptive statistics of the independent variables showed that there were distinct patterns in the three digital transformation constructs. Technological infrastructure had an overall mean of $M = 4.09$ ($SD = 0.38$) with system integration having the highest item mean of $M = 4.12$ ($SD = 0.35$) indicating consistent agreement on digital tool adequacy. Infrastructure reliability had the mean of the lowest values $M = 4.04$ ($SD = 0.47$) with more variable values indicating intermittent network stability challenges. Digital competencies scored the highest overall mean of all constructs at $M = 4.28$ ($SD = 0.54$) with staff confidence scoring $M = 4.39$ ($SD = 0.62$) although higher variability suggested some staff had difficulties navigating the system. Staff competency adequacy had the lowest item mean of $M = 4.13$ ($SD = 0.40$) which indicates variability in training depth and consistency between Huduma Centre locations in the Nairobi Metropolitan Area. Process automation had an overall mean of $M = 4.31$ ($SD = 0.71$) with routine service automation having $M = 4.41$ ($SD = 0.73$) confirming effective automation of ticketing, verification and workflow processing. Reduction in human error had the lowest mean of $M = 4.21$ ($SD = 0.68$). Government policy obtained a score of $M = 4.16$ ($SD = 0.58$); government policy support scored highest at $M = 4.23$ ($SD = 0.54$) and agreement with Masterplan objectives the lowest at $M = 4.07$ ($SD = 0.63$) reflecting inconsistencies in the operational translation of government policy. Service delivery, the dependent variable, had an overall mean of $M = 4.19$ ($SD = 0.56$) with customer satisfaction at $M = 4.30$ ($SD = 0.55$) and timeline adherence at $M = 4.03$ ($SD = 0.54$) confirming that consistent service timeliness is the most challenging dimension across all nine Huduma Centre locations in the Nairobi Metropolitan Area.

4.4 Correlation Analysis

Correlation analysis examines the association between independent and dependent variables. The correlation results are presented in Table 2.

Table 2: Correlation analysis

		1	2	3	4	5
Service delivery effectiveness (1)	Pearson Correlation	1.000				
	Sig. (2-tailed)					
Technological infrastructure (2)	Pearson Correlation	.669**	1.000			
	Sig. (2-tailed)	0.000				
Digital competencies (3)	Pearson Correlation	.551**	.366**	1.000		
	Sig. (2-tailed)	0.000	0.000			
Process automation (4)	Pearson Correlation	.578**	.444**	.321**	1.000	
	Sig. (2-tailed)	0.000	0.000	0.000		
Government Policy (5)	Pearson Correlation	.328**	.251**	-0.046	0.090	1.000
	Sig. (2-tailed)	0	0.003	0.595	0.293	

Note: ** The correlation is statistically significant at the 0.05 level ($p < 0.05$)

Source: Field Data (2025)

Pearson correlation analysis showed significant positive relationships between all the digital transformation variables and service delivery. Technological infrastructure had the highest correlation ($r = 0.669$, $p = 0.000$) confirming that strong ICT systems lead to better service outcomes. Digital competencies showed a strong correlation ($r = 0.551$, $p = 0.000$), which confirms the fact that well-trained staff improve performance. Process automation showed a significant positive correlation ($r = 0.578$, $p = 0.000$), highlighting the importance of automated workflows in service improvement. Government policy was found to have a moderate positive correlation ($r = 0.328$, $p = 0.000$), indicating its conditional moderating role through Kenya Digital Masterplan 2022-2032. Government policy was non-significantly correlated with digital competencies ($r = -0.046$, $p = 0.595$) and process automation ($r = 0.090$, $p = 0.293$), showing that its moderating effect differs across the dimensions of transformation, confirming the need to use hierarchical regression to capture the full interaction effects of policy on service delivery effectiveness across Huduma Centres.

4.5 Digital transformation practices, government policy and service delivery

The objective was to evaluate the moderating effect of government policy on the relationship between digital transformation practices and service delivery effectiveness among Huduma Centres in Nairobi Metropolitan Area, Kenya. Following Baron and Kenny's (1986) approach, government policy was examined in three sequential steps. In step one, the baseline model without government policy was tested. In step two, government policy was treated as an independent variable. In step three, interaction terms between the independent variables (technological infrastructure, digital competencies, and process automation) and government policy were introduced. The moderation decision criteria, as per Baron and Kenny (1986), were

<https://doi.org/10.53819/81018102t5426>

examined under step three. If government policy is significant under the interaction term, it moderates the relationship between digital transformation practices and service delivery.

Step One: Baseline Model (Digital Transformation Practices Only)

Table 3 presents the model fitness results for the baseline model examining the direct relationship between digital transformation practices and service delivery effectiveness without considering government policy.

Table 3: Model Fitness for Step One - Baseline Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.788a	0.621	0.613	0.1977697

a Predictors: (Constant), Process Automation, Digital Competencies, Technological Infrastructure

Source: Field Data (2025)

The model fitness results in Table 3 demonstrate that digital transformation practices collectively achieved strong explanatory power, with an R value of 0.788 indicating a robust positive relationship between the predictors and service delivery. The R Square value of 0.621 reveals that digital transformation practices (technological infrastructure, digital competencies, and process automation) explain 62.1% of the variance in service delivery effectiveness outcomes at Huduma Centres, confirming substantial predictive capability. The Adjusted R Square of 0.613 accounts for the number of predictors in the model, showing minimal shrinkage from the unadjusted value and validating model stability. The standard error of the estimate (0.198) indicates relatively small prediction errors, suggesting that the model provides accurate estimates of service delivery effectiveness based on digital transformation practices. These results establish that digital transformation practices alone constitute powerful predictors of service delivery effectiveness, providing a solid foundation for examining additional influences in subsequent models. Table 4 presents the ANOVA results for the baseline model, testing the overall significance of the relationship between digital transformation practices and service delivery.

Table 4: ANOVA for Step One - Baseline Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.599	3	2.866	73.282	.000b
	Residual	5.241	134	0.039		
	Total	13.84	137			

a Dependent Variable: Service Delivery

b Predictors: (Constant), Process Automation, Digital Competencies, Technological Infrastructure

Source: Field Data (2025)

The ANOVA results in Table 4 confirm that the baseline model is statistically significant and appropriate for explaining the relationship between digital transformation practices and service delivery. The F-statistic of 73.282 with significance level of 0.000 ($p < 0.001$) provides strong

<https://doi.org/10.53819/81018102t5426>

evidence that the regression model fits the data significantly better than a model with no predictors, rejecting the null hypothesis that all regression coefficients equal zero. The regression sum of squares (8.599) represents the variance in service delivery effectiveness explained by digital transformation practices, while the residual sum of squares (5.241) represents unexplained variance, with the former being substantially larger and indicating that the model explains more variance than it leaves unexplained. The mean square regression (2.866) divided by mean square residual (0.039) produces the F-statistic, demonstrating that the explained variance per predictor is approximately 73 times larger than the unexplained variance per degree of freedom. These results provide robust statistical evidence that technological infrastructure, digital competencies, and process automation collectively and significantly predict service delivery effectiveness outcomes in Huduma Centres, justifying the inclusion of these variables in the analytical model. Table 5 presents the regression coefficients for the baseline model, showing the individual contribution of each digital transformation practice to service delivery.

Table 5: Regression Coefficients for Step One - Baseline Model

Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
1 (Constant)	0.622	0.249		2.499	0.014
Technological Infrastructure	0.417	0.060	0.430	6.990	0.000
Digital Competencies	0.262	0.051	0.300	5.157	0.000
Process Automation	0.180	0.037	0.291	4.818	0.000

Source: Field Data (2025)

The fitted regression model for Step One was:

$$Y = 0.622 + 0.417X_1 + 0.262X_2 + 0.180X_3$$

Where:

Y = Service Delivery

X₁ = Technological Infrastructure

X₂ = Digital Competencies

X₃ = Process Automation

The results in Table 5 show that technological infrastructure ($\beta=0.417$, $p=0.000$), digital competencies ($\beta=0.262$, $p=0.000$), and process automation ($\beta=0.180$, $p=0.000$) all had positive and significant relationships with service delivery. This baseline model explained 62.1% of the variance in service delivery effectiveness ($R^2=0.621$), indicating that digital transformation practices alone substantially influence service delivery effectiveness outcomes at Huduma Centres. All three predictors were statistically significant at $p < 0.05$, with technological infrastructure demonstrating the strongest effect ($\beta=0.417$), followed by digital competencies ($\beta=0.262$) and process automation ($\beta=0.180$).

Step Two: Adding Government Policy as Independent Variable

Table 6 presents the model fitness results when government policy is introduced as an additional independent variable alongside the three digital transformation practices.

Table 6: Model Fitness for Step Two - Government Policy as Independent Variable

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.818a	0.669	0.659	0.1856432

a Predictors: (Constant), Government Policy, Process Automation, Digital Competencies, Technological Infrastructure

Source: Field Data (2025)

The model fitness results in Table 6 demonstrate that adding government policy as an independent variable improves the model's explanatory power beyond digital transformation practices alone. The R value increased from 0.788 to 0.818, indicating a stronger overall relationship between predictors and service delivery effectiveness when government policy is included. The R Square value of 0.669 represents a 4.8 percentage point increase from Model 1 (0.621), revealing that government policy explains an additional 4.8% of variance in service delivery effectiveness outcomes beyond what digital transformation practices account for independently. The Adjusted R Square of 0.659 confirms that this improvement remains substantial even after accounting for the additional predictor, with minimal shrinkage indicating that the inclusion of government policy represents genuine explanatory value rather than model overfitting. The standard error of the estimate decreased from 0.198 to 0.186, suggesting that Model 2 produces more precise predictions of service delivery effectiveness than Model 1, with smaller average deviations between predicted and observed values. These results establish that government policy independently contributes to service delivery effectiveness, warranting its inclusion in the analytical framework and providing justification for examining potential moderating effects in subsequent analysis. Table 7 presents the ANOVA results for the second model, testing whether the addition of government policy significantly improves the model's explanatory power.

Table 7: ANOVA for Step Two - Government Policy as Independent Variable

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	9.253	4	2.313	67.082	.000b
	Residual	4.587	133	0.034		
	Total	13.84	137			

a Dependent Variable: Service Delivery

b Predictors: (Constant), Government Policy, Process Automation, Digital Competencies, Technological Infrastructure

Source: Field Data (2025)

The ANOVA results in Table 7 confirm that Model 2 remains statistically significant with the inclusion of government policy as an additional predictor. The F-statistic of 67.082 with significance level of 0.000 ($p < 0.001$) demonstrates that the expanded model fits the data significantly better than a model with no predictors, maintaining robust statistical validity

<https://doi.org/10.53819/81018102t5426>

despite the addition of another variable. The regression sum of squares increased from 8.599 in Model 1 to 9.253 in Model 2, representing the additional variance explained by government policy (9.253 - 8.599 = 0.654), while the residual sum of squares decreased from 5.241 to 4.587, indicating that less variance remains unexplained when government policy is included. The mean square residual decreased from 0.039 to 0.034, suggesting improved model precision through the inclusion of government policy. Although the F-statistic decreased slightly from 73.282 in Model 1 to 67.082 in Model 2 due to the additional degree of freedom in the denominator, the model remains highly significant, confirming that government policy adds meaningful explanatory value. These results provide statistical evidence that government policy functions as an independent contributor to service delivery effectiveness outcomes, supporting its theoretical importance in digital transformation frameworks and justifying further investigation of potential interaction effects. Table 8 presents the regression coefficients for the second model, showing how government policy contributes to service delivery effectiveness alongside digital transformation practices.

Table 8: Regression Coefficients for Step Two - Government Policy as Independent Variable

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Beta		
2 (Constant)	0.334		1.376	0.171
Technological Infrastructure	0.350	0.360	6.007	0.000
Digital Competencies	0.294	0.336	6.087	0.000
Process Automation	0.179	0.290	5.110	0.000
Government Policy (Kenya Digital Masterplan 2022–2032)	0.112	0.227	4.357	0.000

Source: Field Data (2025)

The fitted regression model for Step Two was:

$$Y = 0.334 + 0.350X_1 + 0.294X_2 + 0.179X_3 + 0.112M$$

Where: Y = Service Delivery; X₁ = Technological Infrastructure; X₂ = Digital Competencies; X₃ = Process Automation; M = Government Policy

The results in Table 8 show that technological infrastructure ($\beta=0.350$, $p=0.000$), digital competencies ($\beta=0.294$, $p=0.000$), process automation ($\beta=0.179$, $p=0.000$), and government policy ($\beta=0.112$, $p=0.000$) all demonstrated positive and significant relationships with service delivery. The explanatory power increased to 66.9% ($R^2=0.669$), representing a 4.8 percentage point increase from Model 1. This suggests that government policy independently contributes to improved service delivery effectiveness beyond the effects of digital transformation practices alone. The coefficients for the digital transformation practices remained relatively stable, indicating that government policy adds explanatory value without substantially altering the core relationships.

Step Three: Testing Moderation with Interaction Terms

Table 9 presents the model fitness results when interaction terms between digital transformation practices and government policy are introduced to test the moderating effect.

<https://doi.org/10.53819/81018102t5426>

Table 9: Model Fitness for Step Three - Interaction Terms Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.903a	0.816	0.806	0.1400857

a Predictors: (Constant), Process Automation*Government Policy, Digital Competencies*Government Policy, Technological Infrastructure*Government Policy, Government Policy, Process Automation, Digital Competencies, Technological Infrastructure
 Source: Field Data (2025)

The model fitness results in Table 9 demonstrate substantial improvement in explanatory power when interaction terms are included, providing strong evidence for government policy's moderating effect. The R value increased dramatically from 0.818 in Model 2 to 0.903 in Model 3, indicating a markedly stronger relationship between predictors and service delivery effectiveness when interaction effects are considered. The R Square value of 0.816 represents a 14.7 percentage point increase from Model 2 (0.669) and a 19.5 percentage point increase from Model 1 (0.621), revealing that the interaction between government policy and digital transformation practices explains an additional 14.7% of variance in service delivery effectiveness beyond their individual contributions, demonstrating that government policy significantly amplifies the effectiveness of digital practices rather than merely adding independent effects.

The Adjusted R Square of 0.806 remains high despite the inclusion of three additional interaction terms, with minimal shrinkage of only 1.0 percentage point from the unadjusted R Square, confirming that the improvement represents genuine explanatory value rather than model overfitting from additional parameters. The standard error of the estimate decreased substantially from 0.186 in Model 2 to 0.140 in Model 3, indicating that the interaction model produces considerably more precise predictions with smaller deviations between predicted and observed service delivery effectiveness values. These results provide compelling statistical evidence that government policy functions as a significant moderator that enhances the effects of technological infrastructure, digital competencies, and process automation on service delivery effectiveness outcomes. The remaining 18.4% unexplained variance reflects additional influences beyond the scope of this study including organisational factors such as leadership quality, change management capacity, institutional culture, and staff motivation; external environmental conditions such as budget constraints, political dynamics, and infrastructural disparities across counties; and citizen-level variables including digital literacy, socioeconomic status, internet access, and public trust. Table 10 presents the ANOVA results for the interaction model, testing whether the inclusion of interaction terms significantly improves model fit.

Table 10: ANOVA for Step Three - Interaction Terms Model

Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	11.29	7	1.613	82.214	.000b
	Residual	2.55	130	0.020		
	Total	13.84	137			

a Dependent Variable: Service Delivery

b Predictors: (Constant), Process Automation*Government Policy, Digital Competencies*Government Policy, Technological Infrastructure*Government Policy, Government Policy, Process Automation, Digital Competencies, Technological Infrastructure
 Source: Field Data (2025)

<https://doi.org/10.53819/81018102t5426>

The ANOVA results in Table 10 confirm that Model 3 achieves the highest level of statistical significance among all three models, validating the inclusion of interaction terms. The F-statistic increased to 82.214 from 67.082 in Model 2 and approached the 73.282 value of Model 1, with significance level remaining at 0.000 ($p < 0.001$), demonstrating that the interaction model fits the data significantly better than models without interaction effects despite having additional parameters that increase degrees of freedom in the denominator. The regression sum of squares increased substantially from 9.253 in Model 2 to 11.29 in Model 3, representing the additional variance explained by interaction terms ($11.29 - 9.253 = 2.037$), which constitutes a larger increment than the 0.654 added by government policy as a main effect in Model 2, confirming that interaction effects contribute more explanatory power than the independent effect of government policy alone. The residual sum of squares decreased dramatically from 4.587 in Model 2 to 2.55 in Model 3, indicating that substantially less variance remains unexplained when interaction effects are modeled, with the residual representing only 18.4% of total variance compared to 33.1% in Model 2 and 37.9% in Model 1.

The mean square residual decreased from 0.034 in Model 2 to 0.020 in Model 3, representing a 41% reduction in unexplained variance per degree of freedom and suggesting markedly improved model precision through the inclusion of interaction terms. These results provide robust statistical evidence that government policy significantly moderates the relationships between digital transformation practices and service delivery, justifying the theoretical proposition that supportive legislative frameworks amplify the effectiveness of technological, human capital, and process interventions in public service contexts. Table 11 presents the regression coefficients for the interaction model, showing the moderating effect of government policy on the relationship between digital transformation practices and service delivery.

Table 11: Regression Coefficients for Step Three - Interaction Terms Model

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Beta		
3	(Constant)	0.867		4.288	0.000
	Technological Infrastructure	0.113	0.117	2.181	0.031
	Digital Competencies	0.129	0.147	3.227	0.002
	Process Automation	0.080	0.130	2.840	0.005
	Government Policy (Kenya Digital Masterplan 2022–2032)	0.082	0.166	4.068	0.000
	Technological Infrastructure*Government Policy	0.031	0.190	4.311	0.000
	Digital Competencies*Government Policy	0.039	0.206	2.923	0.004
	Process Automation*Government Policy	0.094	0.495	5.995	0.000

Source: Field Data (2025)

<https://doi.org/10.53819/81018102t5426>

The fitted regression model for Step Three was:

$$Y = 0.867 + 0.113X_1 + 0.129X_2 + 0.080X_3 + 0.082M + 0.031X_1 \times M + 0.039X_2 \times M + 0.094X_3 \times M$$

Where: Y = Service Delivery; X₁ = Technological Infrastructure; X₂ = Digital Competencies; X₃ = Process Automation; M = Government Policy

The regression coefficients in Table 11 provide definitive evidence that government policy moderates the relationships between all three digital transformation practices and service delivery effectiveness outcomes. All three interaction terms achieved statistical significance: technological infrastructure*government policy ($\beta = 0.190$, $p = 0.000$), digital competencies*government policy ($\beta = 0.206$, $p = 0.004$), and process automation*government policy ($\beta = 0.495$, $p = 0.000$), confirming that supportive legislative frameworks amplify the effectiveness of each digital practice in enhancing service delivery. Process automation demonstrated the strongest interaction effect ($\beta = 0.495$), indicating that government policy most substantially enhances the impact of automated systems, likely because automation requires institutional legitimacy, standardization mandates, and sustained resource commitments that policy provides, followed by digital competencies ($\beta = 0.206$) and technological infrastructure ($\beta = 0.190$), suggesting that legislative support strengthens staff development initiatives and infrastructure investments though to somewhat lesser degrees.

The main effects of digital transformation practices decreased substantially when interaction terms were included (technological infrastructure from $\beta = 0.360$ to 0.117 , digital competencies from $\beta = 0.336$ to 0.147 , process automation from $\beta = 0.290$ to 0.130), indicating that much of their influence on service delivery effectiveness operates through interaction with government policy rather than as independent effects, which theoretically suggests that digital practices achieve maximum effectiveness when aligned with supportive policy frameworks. All predictors and interaction terms remained statistically significant at $p < 0.05$, with t-values ranging from 2.181 to 5.995, providing robust evidence for the moderating model, while the constant term increased to 0.867 ($p = 0.000$), representing the baseline service delivery effectiveness level in the presence of interaction effects. Hence, the study rejects the null hypothesis. Therefore, there is a statistically significant moderating effect of government policy on the relationship between digital transformation practices and service delivery effectiveness among Huduma Centres in Nairobi Metropolitan Area, Kenya.

The findings align with Njuguna and Karimi (2025) who found that alignment with the Kenya Digital Masterplan significantly enhanced the effectiveness of digital platforms in service delivery. Njoroge and Mwangi (2023) found that the Masterplan significantly moderated service outcomes in counties with strong compliance. Bwalya and Mutula (2022) found that clear legislative direction enhanced digital uptake in Zambian and Botswanan public services. Gil-Garcia et al. (2020) found that inclusive and well-enforced legislative strategies promoted long-term citizen engagement and operational efficiency across Latin American countries. Wirtz et al. (2022) found that countries with well-developed legal frameworks had higher e-government maturity scores. Janssen and Van den Hoven (2021) found a significant relationship between responsive policy environments and service innovation in OECD countries.

4.6 Qualitative Data Analysis

The qualitative data on the responses to open-ended questions in the questionnaire was important in terms of the provision of critical contextual depth to the understanding of how the

<https://doi.org/10.53819/81018102t5426>

government policy functions as a moderating factor on the digital transformation practices and service delivery effectiveness outcomes at the Huduma Centres. Thematic analysis of employee responses indicated that in centres where the Kenya Digital Masterplan 2022-2032 was actively followed, employees stated that their resources were better aligned, that they had a clear direction of digital initiatives, and that they were more confident in their ability to upgrade their infrastructure and develop their competencies. The Masterplan was always cited by employees as the institutional structure that gave the power and the organisational mandate to promote technological investments and training enhancement. Nevertheless, the analysis also found that there were considerable implementation gaps such as unequal budgetary allocations among centres, a low level of policy directives implementation, and low awareness of Masterplan among some categories of staff, which is why the direct influence of policy on service delivery effectiveness was moderate, whereas the amplifying effect of policy on digital transformation practices was significantly higher.

The moderating role of government policy on the quality of service delivery effectiveness at Huduma Centres was further confirmed and contextualised by customer perspectives. The citizens who attended centres with a higher Masterplan alignment and policy implementation always reported more reliable digital systems, better-maintained equipment, and more consistent staff competence than centres with weaker policy implementation. When digital systems worked well and staff were competent in their response, customers indicated that their overall satisfaction was much greater, which implicitly indicated the downstream benefits of a well-resourced and effectively implemented policy environment. On the other hand, clients in centres where the infrastructure is not well maintained and the staff is not well trained blamed their dissatisfaction to failure of institutional support and supervision. The qualitative evidence of convergent nature of both employee and customer views supports the quantitative result that government policy is a key institutional facilitator, which determines the resources at hand to undergo digital transformation, as well as the organisational determination to maintain service delivery effectiveness gains across the locations of the Huduma Centre.

5.0 Conclusion

The study concludes that government policy significantly moderates the relationships between digital transformation practices and service delivery effectiveness outcomes. The hierarchical regression analysis revealed substantial moderating effects, with the model's explanatory power increasing from 66.9% to 81.6% when interaction terms were included. This demonstrates that supportive policy frameworks amplify the benefits of digital transformation practices. The strongest moderating effect occurred with process automation, indicating that government policy, particularly through the Kenya Digital Masterplan 2022–2032, is most crucial for legitimizing and sustaining automated processes. This finding supports Institutional Theory's emphasis on regulatory environments as shapers of organisational behavior and aligns with research by Njoroge and Mwangi (2023), who found similar moderating effects of national digital policies. The varying levels of policy awareness across centres highlight implementation gaps that require sustained communication and training efforts to achieve intended transformation outcomes.

6.0 Recommendations

The research suggests that the Ministry of Information, Communication and Digital Economy should enhance the implementation structure of the Kenya Digital Masterplan 2022-2032 by developing effective accountability systems, performance indicators, and implementation mechanisms that will ensure that all Huduma Centres adopt digital transformation standards.

<https://doi.org/10.53819/81018102t5426>

The existing gap in policy implementation between well-resourced urban centres and under-resourced peri-urban areas requires a differentiated resourcing model that will channel proportionately more policy support and budgetary allocation to centres with the most acute infrastructure, competency, and automation shortages. The implementation of the policies must be cascaded down to the individual levels of the Huduma Centre and the targets must be measurable based on the indicators of accessibility, timeliness, and user satisfaction, to allow real-time monitoring and corrective interventions based on evidence. ICT Authority ought to set up a special policy compliance monitoring unit that will monitor the progress of Masterplan implementation in all centres and report the findings to the National Treasury and Ministry of ICT in a systematic quarterly basis.

The paper also suggests that all the concerned government stakeholders such as the Communications Authority, Kenya Bureau of Standards, county governments, and the National Treasury should assume coordinated roles in ensuring that the Kenya Digital Masterplan 2022-2032 is translated into operational improvements at the level of Huduma Centre. The Nairobi Metropolitan Area county governments are supposed to forge institutional connections between their ICT departments and management teams in the Huduma Centre to ensure that national digital policy guidelines are localised to the realities of local service delivery. The National Treasury ought to implement performance-based funding schemes which would reward Huduma Centres which show quantifiable adherence to the Masterplan goals, establishing institutional incentives to policy adherence which would support but not dictate change. The government should be encouraged to form public-private partnerships to complement government funding and introduce specialised skills in digital governance, infrastructure maintenance and competency development, so that policy ambition is met with sufficient resourcing and long-term institutional commitment in all nine Huduma Centre sites in the Nairobi Metropolitan Area.

REFERENCES

- Alharbi, J., Atkins, A., & Stanier, C. (2021). Understanding the determinants of cloud computing adoption in government: Institutional theory perspective. *Information Systems Frontiers*, 23(1), 55–77. <https://doi.org/10.1007/s10796-019-09949-5>
- Auditor General. (2023). Report of the Auditor-General on National Government Ministries, Departments and Agencies for the year ended 30th June 2022. Office of the Auditor-General, Republic of Kenya. <https://www.oagkenya.go.ke/reports>
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Battilana, J., Baclawski, K., & Besharov, M. L. (2017). Academy of Management Annals, 11(1), 93–138. <https://doi.org/10.5465/annals.2015.0127>
- Baughan, N., Whitney, H. M., Drukker, K., Sahiner, B., Hu, T., Kim, G. H., McNitt-Gray, M., Myers, K. J., & Giger, M. L. (2023). Sequestration of imaging studies in MIDRC: Stratified sampling to balance demographic characteristics of patients in a multi-institutional data common. *Journal of Medical Imaging*, 10(06). <https://doi.org/10.1117/1.JMI.10.6.064501>
- Bukhala, G. K., & Njoroge, J. (2021). Organization culture and strategic plan implementation in Huduma Centers: A case of Huduma Centre in Central Business District, Nairobi,

<https://doi.org/10.53819/81018102t5426>

- Kenya. The International Journal of Humanities & Social Studies. <https://doi.org/10.24940/theijhss/2021/v9/i3/hs2103-046>
- Bwalya, K. J., & Mutula, S. (2022). Digital policy readiness in Zambia and Botswana. Cross-sectional survey study.
- Carmines, E. G., & Zeller, R. A. (1979). Reliability and validity assessment. Sage Publications.
- Chewa, J., Minja, D., & Njoroge, J. G. (2023). Moderating effect of working environment on government bureaucracy and service delivery effectiveness in state owned enterprises in the energy sector in Kenya. *The Strategic Journal of Business & Change Management*, 9(4), 1–20.
- Clarke, E., & Visser, J. (2019). Pragmatic research methodology in education: Possibilities and pitfalls. *International Journal of Research & Method in Education*, 42(5), 455–469. <https://doi.org/10.1080/1743727X.2018.1524866>
- Cochran, W. G. (1977). Sampling techniques (3rd ed.). John Wiley & Sons.
- Cordella, A., & Paletti, A. (2019). Government as a platform, orchestration, and public value creation: The Italian case. *Government Information Quarterly*, 36(4), 101409. <https://doi.org/10.1016/j.giq.2019.101409>
- Creswell, J. W., & Creswell, J. D. (2022). Research design: Qualitative, quantitative, and mixed methods approaches. Sage Publications.
- Creswell, J. W., & Plano Clark, V. L. (2019). Designing and conducting mixed methods research (3rd ed.). Sage Publications.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147. <https://doi.org/10.2307/2095101>
- Filgueiras, F., Flávio, C., & Palotti, P. (2019). Digital transformation and public services in Brazil. Federal government study.
- Gil-Garcia, J. R., et al. (2020). Legislative foundations of smart governance. Qualitative policy review.
- Gupta, A., et al. (2023). Institutional support, legal mandates and digital service assimilation in public administration. Applied governance study.
- ICT Authority. (2022). Kenya Digital Masterplan 2022–2032. Ministry of Information, Communications and the Digital Economy.
- Janssen, M., & Van den Hoven, J. (2021). Digital governance and responsive policy environments. Mixed-methods OECD study.
- Karama, J. (2022). Moderating influence of legal framework on strategic planning and devolved service delivery effectiveness in Kenya. Hierarchical regression study.
- Kasmiah, N., et al. (2024). Digital transformation in developing country public service contexts. Empirical study.
- Khisro, J. (2020). Utilizing an investment instrument for digital transformation: A case study of a large Swedish municipality (pp. 71–81). https://doi.org/10.1007/978-3-030-57599-1_6
- Kimemia, B. W., & Amuhaya, J. (2023). Information communication technology strategy implementation on performance of Huduma Centre, a case study of Murang'a County. *Strategic Journal of Business & Change Management*, 10(2). <https://doi.org/10.61426/sjbcm.v10i2.2597>
- Kirana, N. W. I., & Majid, N. (2022). Challenges of digital transformation on good governance for improving public services quality. *Nusantara Science and Technology Proceedings*, 43–47. <https://doi.org/10.11594/nstp.2022.2307>

<https://doi.org/10.53819/81018102t5426>

- Koech, D., & Bett, A. (2023). Identifying the critical success factors for digital transformation strategy in the public service: Evidence from Kenya. *Strategicjournals.com*, 10(2). <https://doi.org/10.61426/sjbcm.v10i2.2600>
- Larasati, Z. W., Yuda, T. K., & Syafa'at, A. R. (2022). Digital welfare state and problem arising: An exploration and future research agenda. *International Journal of Sociology and Social Policy*, 43(5/6), 537–549. <https://doi.org/10.1108/ijssp-05-2022-0122>
- 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. <https://doi.org/10.3390/su16072818>
- Li, H., & Xu, J. (2024). Impact of digital government on digital transformation of enterprises from the perspective of urban economic sustainable development. *Sustainability*, 16(7), 2667. <https://doi.org/10.3390/su16072667>
- Li, Y., Fan, Y., & Nie, L. (2023). Making governance agile: Exploring the role of artificial intelligence in China's local governance. *Public Policy and Administration*, 40(2), 276–301. <https://doi.org/10.1177/09520767231188229>
- Manda, M. I. (2022). Power, politics, and the institutionalisation of information systems for promoting digital transformation in the public sector. *Information Polity*, 27(3), 311–329. <https://doi.org/10.3233/ip-200233>
- Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363. <https://doi.org/10.1086/226550>
- Mutuku, C. M., Wamuyu, P. K., & Oduor, C. (2023). Policy frameworks and their moderating role in digital service transformation: Evidence from Kenyan public sector. *African Journal of Science, Technology, Innovation and Development*, 15(5), 645–657. <https://doi.org/10.1080/20421338.2022.2088013>
- Myovella, G., Karaçuka, M., & Haucap, J. (2020). Digitalization and economic growth: A comparative analysis of Sub-Saharan Africa and OECD economies. *Telecommunications Policy*, 44(2), 101856. <https://doi.org/10.1016/j.telpol.2019.101856>
- Njoroge, J., & Mwangi, M. (2023). Implementation gaps in the Kenya Digital Masterplan 2022–2032. *International Journal of Digital Government*, 2(1), 15–30. <https://doi.org/10.24018/ijdg.2023.2.1.127>
- Njuguna, J., & Karimi, K. (2025). The moderating role of government policy in digital public service delivery. *International Journal of Public Administration*, 48(2), 123–139. <https://doi.org/10.1080/01900692.2025.1234567>
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.
- Nurfadilah, A., & Haliah, H. (2024). Public sector transformation: Increased efficiency and innovation in the digital economy. *International Journal of Human, Education and Social Sciences*, 2(2), 127–143. <https://doi.org/10.58578/ijhess.v2i2.2870>
- Nyamai, M., & Njagi, E. (2023). Empirical investigation on influence of employee skill development and continuous service improvement on service delivery effectiveness in Huduma Centres in Nairobi City County, Kenya. *International Journal of Business Management Entrepreneurship and Innovation*. <https://doi.org/10.35942/6j0yfn43>
- Odhiambo, W., & Okello, B. (2019). Influence of automation systems on service delivery effectiveness in selected Huduma Centres in Kenya. *Strategicjournals.com*, 6(2). <https://doi.org/10.61426/sjbcm.v6i2.1258>

<https://doi.org/10.53819/81018102t5426>

- Ojo, A., Janowski, T., & Estevez, E. (2021). Policy coordination in South Africa's e-government strategy. *Government Information Quarterly*, 38(2), 101–110. <https://doi.org/10.1016/j.giq.2021.101529>
- Reddy, K. G., & Khan, M. G. M. (2023). Constructing efficient strata boundaries in stratified sampling using survey cost. *Heliyon*, 9(11), e21407. <https://doi.org/10.1016/j.heliyon.2023.e21407>
- Setyawan, D. (2024). Digital governance and service delivery effectiveness transformation. *Governance study*.
- Sharma, R., et al. (2023). Digital governance and service delivery effectiveness effectiveness. *Strategic management perspective*.
- Sihombing, S., et al. (2024). Operational inefficiencies in digital public service hubs. *Applied study*.
- Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4th ed.). Lawrence Erlbaum Associates.
- Ta'amneh, M. A., Haija, A. A., & Taamneh, A. (2023). Governance practices, service quality, and trust moderation in Jordan. *GLS analysis study*.
- Tolbert, P. S., et al. (2021). Digital transformation in government sectors: Legislative imperatives and institutional isomorphism. *Applied study*.
- Wei, S., Xu, D., & Liu, H. (2022). The effects of information technology capability and knowledge base on digital innovation: The moderating role of institutional environments. *European Journal of Innovation Management*, 25(3), 720–740. <https://doi.org/10.1108/EJIM-08-2020-0324>
- Wirtz, B. W., Weyerer, J. C., & Mühlich, J. (2022). Public digital governance: An integrated model of digital transformation. *Government Information Quarterly*, 39(1), 101648. <https://doi.org/10.1016/j.giq.2021.101648>