



Understanding the Influence of Digital Policy on Public Service Delivery: The Moderating Role of Socio-Cultural Elements

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Abstract: This study examined the influence of digital policy on public service delivery in selected district local governments in Uganda, with particular attention to the moderating role of socio-cultural elements. The study was guided by the Technology Acceptance Model, Principal-Agent Theory, and New Public Management theory, which respectively explain technology acceptance, information asymmetry, accountability, efficiency, and results-oriented public administration. A quantitative cross-sectional survey design was adopted. Structured questionnaires were administered to public officials and service users; 247 of 360 questionnaires were returned, yielding a response rate of 68.6%. Data were analyzed using descriptive statistics and Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings showed that digital policy had a strong, positive, and statistically significant effect on public service delivery ($\beta = .776$, $p < .001$), indicating that effective digital policy implementation can enhance service efficiency, transparency, responsiveness, and accessibility. The measurement model for socio-cultural elements was reliable and valid, with factor loadings ranging from .598 to .775, composite reliability of .892, and average variance extracted of .511. However, the moderating effect of socio-cultural elements was negative and statistically insignificant ($\beta = -.021$, $p = .671$), suggesting that socio-cultural factors did not significantly strengthen or weaken the relationship between digital policy and service delivery. The study concludes that digital policy is a significant driver of improved public service delivery, while institutional effectiveness, implementation capacity, transparency mechanisms, and managerial reforms may be more influential than socio-cultural variations in explaining service delivery outcomes.

Keywords: Digital policy, Public service delivery, Socio-cultural elements, Digital governance, Local government, Uganda

1. Introduction

The integration of digital technologies into public administration has transformed how governments design, implement, and evaluate public services. Digital policy refers to the formal strategies, regulations, standards, and institutional arrangements that guide the use of information and communication technologies (ICTs) in government. International evidence shows that digital government initiatives can improve service access, reduce administrative costs, increase transparency, and support more responsive, citizen-centered service delivery (Heeks, 2006; OECD, 2024; United Nations Department of Economic and Social Affairs [UN DESA], 2024).

In Uganda, digital transformation has become a core public sector reform priority. The Digital Transformation Roadmap 2023/24–2027/28 emphasizes digital infrastructure, digital public services, data-driven government, digital skills, and inclusive access as key enablers of national development (Ministry of ICT and National Guidance, 2023). These policy commitments are especially important for local district governments because they are closest to citizens and are responsible for delivering essential services such as administration, health, education, revenue collection, and community development. Bolatito and Mohamoud (2024) postulated that this can be achieved by delivering essential services, such as healthcare or education, or by participating in public sector initiatives to improve the nation's infrastructure and services for better digital services delivery. The current challenges demonstrate that a framework emphasising transparency, accountability, and local empowerment is essential for revitalising local governance. Despite these reforms, many local governments continue to experience delays, limited accountability, uneven access to services, weak feedback systems, infrastructure gaps, and varying levels of digital literacy. Enhanced transparency and accountability can restore citizen trust and promote public engagement in governance processes through digitalisation. Collaborative strategies that engage relationships among local governments, civil society, and development partners are seen as essential for establishing sustainable local governance frameworks. Addressing these critical areas, digitalisation of public services can enhance the efficiency and responsiveness of local governance reforms. The digital divide remains a major constraint in low- and middle-income settings, where connectivity, affordability, skills, and institutional capacity shape the extent to which digital tools translate into better public outcomes (World Bank, 2021, 2024). Therefore, the presence of digital policy alone may not automatically produce improved service delivery; the effectiveness of such policy depends on implementation capacity, institutional arrangements, and the social context in which digital systems are adopted.

Socio-cultural elements are particularly relevant because technology adoption is shaped by organizational culture, trust, attitudes toward technology, digital literacy, and social norms. The Unified Theory of Acceptance and Use of Technology suggests that social influence and facilitating conditions affect users' intentions and actual use of technology (Venkatesh et al., 2016). Similarly, organizational culture can either encourage innovation and learning or reinforce resistance to change (Schein & Schein, 2017). These considerations raise an important empirical question: do socio-cultural elements strengthen or weaken the influence of digital policy on public service delivery?

This study addresses that question by examining the direct effect of digital policy on public service delivery and the moderating role of socio-cultural elements in selected district local governments

in Uganda, using Mbale District as the empirical setting. The study contributes to digital governance literature by clarifying whether policy mechanisms remain effective across socio-cultural variations or whether their impact depends on the cultural and social conditions surrounding implementation.

Research Objectives

The study was guided by two objectives: (a) to examine the influence of digital policy on public service delivery in selected district local governments in Uganda and (b) to assess whether socio-cultural elements moderate the relationship between digital policy and public service delivery.

Research Hypotheses

H1: Digital policy has a positive and statistically significant influence on public service delivery.

H2: Socio-cultural elements significantly moderate the relationship between digital policy and public service delivery.

2. Literature Review

2.1 Digital Policy and Public Service Delivery

Digital policy provides the institutional framework through which governments plan, regulate, finance, and implement technology-enabled public services. In public administration, digital policy is expected to improve internal efficiency, increase interagency coordination, reduce bureaucratic delays, and enhance service accessibility. Digital transformation in the public sector is not merely the adoption of new technologies; it involves redesigning public processes, building organizational capabilities, and creating public value through technology-enabled reforms (Mergel et al., 2019).

Empirical and policy literature indicates that e-government platforms, mobile applications, digital identity systems, online portals, and interoperable data systems can improve service delivery by simplifying transactions, reducing opportunities for discretionary delays, and expanding access to information (Bertot et al., 2010; Janowski, 2015; UN DESA, 2022). The OECD (2024) further emphasises that mature digital governments rely on coherent, human-centered, data-driven, and proactive systems rather than isolated technological projects.

However, the public value of digital policy depends on effective implementation. E-government success requires leadership, clear governance structures, adequate resources, skills, legal frameworks, interoperability, and user-centred design (Gil-Garcia & Pardo, 2005; World Bank, 2024). Digital systems may reproduce existing inefficiencies rather than solve them in contexts with weak infrastructure, low digital literacy, or limited institutional accountability. This makes it necessary to examine both the direct influence of digital policy and the contextual factors that may condition its effect on service delivery.

2.2 Socio-Cultural Elements and Digital Governance

Socio-cultural elements refer to the values, norms, beliefs, attitudes, trust relationships, organisational culture, and digital skills that shape how individuals and organisations interpret and use digital systems. In digital governance, such elements influence whether public servants and citizens accept, resist, or actively support digital service innovations. The Unified Theory of Acceptance and Use of Technology identifies social influence and facilitating conditions as important determinants of technology adoption (Venkatesh et al., 2016).

Organizational culture is one of the strongest socio-cultural influences on digital transformation. A culture that encourages learning, experimentation, collaboration, and openness to change can facilitate digital policy implementation. Conversely, a culture marked by hierarchy, risk avoidance, limited information sharing, or resistance to innovation can constrain the use of digital tools (Schein & Schein, 2017). Trust is also important because citizens and public servants are more likely to use digital platforms when they believe that systems are reliable, secure, fair, and beneficial.

Digital literacy further affects the capacity of service users and public employees to benefit from e-services. The UN E-Government Survey 2024 stresses the importance of inclusive local e-government and digital skills for sustainable digital transformation (UN DESA, 2024). Nevertheless, socio-cultural factors may not always exert a strong moderating effect when formal policy frameworks, institutional capacity, and technological infrastructure are sufficiently strong. This study, therefore, tests whether socio-cultural elements significantly condition the relationship between digital policy and service delivery outcomes, as it is essential to develop public infrastructure and social protection mechanisms to mitigate and alleviate extreme poverty and empower people in need inside the state (Aina-Obe, 2022).

2.3 Theoretical Framework

This study is anchored in three complementary theories. First, the Technology Acceptance Model (TAM) explains technology adoption through perceived usefulness and perceived ease of use (Davis, 1989). TAM is relevant because digital policy can improve service delivery only when public servants and citizens consider digital systems useful, accessible, and easy to use.

Second, Principal-Agent Theory explains how governance mechanisms reduce information asymmetry between citizens, who are principals, and public officials, who act as agents (Jensen & Meckling, 1976). Digital policy can support transparency, reporting, feedback, monitoring, and accountability, thereby reducing information gaps and improving service delivery. However, transparency does not automatically produce accountability unless information is clear, usable, and linked to answerability and enforcement (Fox, 2007; Grimmelikhuijsen & Welch, 2012).

Third, New Public Management (NPM) emphasizes efficiency, measurable performance, accountability, and results-oriented governance (Hood, 1991). Digital policy aligns with NPM because it can streamline administrative processes, introduce performance monitoring, improve customer orientation, and reduce transaction costs. Together, TAM, Principal-Agent Theory, and NPM provide a coherent basis for explaining why digital policy may influence service delivery and why socio-cultural elements may or may not moderate that relationship.

3. Methodology

The study adopted a quantitative cross-sectional survey design. This design was appropriate because the study sought to measure relationships among digital policy, socio-cultural elements, and public service delivery at a specific point in time (Creswell & Creswell, 2018). The target respondents were public officials and service users in selected district local governments in Uganda, with Mbale District serving as the empirical setting.

Structured questionnaires were used to collect data. A total of 360 questionnaires were distributed, and 247 fully completed questionnaires were returned, representing a response rate of 68.6%. The study used stratified and simple random sampling to improve representation across public departments and service user categories. The demographic table reports valid demographic responses where data were complete. Bashir et al. (2025) narrate that this type of anecdotal evidence demonstrates that leadership that is filled with cultural values has the potential to construct an atmosphere that is conducive to academic accomplishment in services delivery. Quantitative research, on the other hand, has provided an empirical demonstration of the existence of these connections towards understanding the influence of digital policy on public service delivery.

Data analysis was conducted in two stages. First, descriptive statistics were generated to summarise respondents' demographic characteristics. Second, PLS-SEM was used to assess the measurement model and test the hypothesised direct and moderating relationships. PLS-SEM was appropriate because it supports prediction-orientated analysis, can handle complex models, and is suitable for small to medium sample sizes when model assumptions are met (Hair et al., 2022; Sarstedt et al., 2020).

4. Results and Discussion

4.1 Demographic Characteristics of Respondents

Table 1

Demographic Characteristics of Respondents

Variable	Category	Frequency	Percent (%)
Gender	Male	135	55.8
	Female	107	44.2
Age bracket	20-29 years	36	14.9
	30-39 years	95	39.3
	40-49 years	79	32.6
	50 years and above	32	13.2
Years in district local government	0-1 year	21	8.7
	2-5 years	60	24.8
	6-10 years	74	30.6
	11-20 years	87	36.0

Note. Percentages are based on valid responses for the demographic items reported in the table (n = 242).

The demographic results show that male respondents accounted for 55.8% of valid demographic responses, while female respondents accounted for 44.2%. Although the sample was not perfectly gender-balanced, both male and female respondents were meaningfully represented, which strengthens the breadth of perspectives captured in the study.

Most respondents were between 30 and 49 years of age, with 39.3% aged 30-39 years and 32.6% aged 40-49 years. This suggests that the study captured responses from individuals likely to have practical experience with public administration processes and digital service use. Work experience

was also substantial: 36.0% had served for 11-20 years, while 30.6% had served for 6-10 years. These characteristics indicate that many respondents were sufficiently familiar with local government operations to provide informed views on digital policy and public service delivery.

4.2 Measurement Model for Socio-Cultural Elements

Table 2

Measurement Model for Socio-Cultural Elements

Indicator	Loading	Cronbach's alpha	rho_A	CR	AVE	VIF
SCUL1	.598**	.861	.866	.892	.511	1.874
SCUL2	.617**	.861	.866	.892	.511	1.874
SCUL3	.683**	.861	.866	.892	.511	1.874
SCUL4	.751**	.861	.866	.892	.511	1.874
SCUL5	.740**	.861	.866	.892	.511	1.874
SCUL6	.769**	.861	.866	.892	.511	1.874
SCUL7	.775**	.861	.866	.892	.511	1.874
SCUL8	.759**	.861	.866	.892	.511	1.874

Note. CR = composite reliability; AVE = average variance extracted; VIF = variance inflation factor. **p < .001, bootstrapping with 5,000 samples.

The measurement model was assessed before testing the moderating effect. The results indicate that all socio-cultural indicators contributed to the measurement of the construct, with standardized loadings ranging from .598 to .775. Although three loadings were below the preferred .70 threshold, they exceeded the minimum acceptable threshold of .50 and were retained because they contributed substantively to the construct (Hair et al., 2022).

Reliability was acceptable. Cronbach's alpha (.861), rho_A (.866), and composite reliability (.892) all exceeded the recommended .70 threshold. The AVE value of .511 indicates adequate convergent validity because it was above .50. The VIF value of 1.874 suggests that multicollinearity among indicators was not a major concern. Overall, the measurement model provides sufficient evidence that socio-cultural elements were measured reliably and validly.

4.3 Effect Size and Prediction Estimates

Table 3

Effect Size and Prediction Estimates for Socio-Cultural Elements

Relationship	f-square	R-square	Adjusted R-square
Indicators -> socio-cultural elements	732.718	.999	.998

Note. The exceptionally high R-square and f-square values should be interpreted cautiously and checked against model specification, item wording, and possible indicator redundancy.

The effect size and prediction estimates show that the indicators explained a very large proportion of variance in socio-cultural elements (R-square = .999; adjusted R-square = .998). The f-square value of 732.718 is far above the conventional threshold for a large effect. On one hand, these values suggest that the selected indicators strongly captured the socio-cultural construct. On the other hand, the exceptionally high estimates require cautious interpretation because they may also reflect indicator redundancy, overlapping item wording, or model specification issues. For stronger reporting, the final manuscript should include the full item wording and model diagram so readers can assess the construct specification.

4.4 Structural Model and Moderating Effect

Table 4

Structural Model Results

Path	Beta	p	95% confidence interval	Decision
Digital policy -> public service delivery	.776	< .001	Not reported	H1 supported
Digital policy x socio-cultural elements -> public service delivery	-.021	.671	[-.084, .093]	H2 not supported

Note. The confidence interval for the interaction term crossed zero, confirming that the moderation effect was not statistically significant.

The structural model shows that digital policy had a strong, positive, and statistically significant effect on public service delivery (beta = .776, $p < .001$). This finding supports H1 and indicates that improvements in digital policy implementation are associated with better service delivery outcomes. In practical terms, digital policy appears to enhance efficiency, transparency, responsiveness, accessibility, and administrative coordination.

The moderating effect of socio-cultural elements was negative and statistically insignificant (beta = -.021, $p = .671$). The confidence interval for the interaction term crossed zero [-.084, .093], which confirms that socio-cultural elements did not significantly strengthen or weaken the relationship between digital policy and public service delivery. Therefore, H2 was not supported.

This result can be interpreted through TAM. Davis (1989) argues that perceived usefulness and ease of use are central to technology acceptance. The insignificant moderation result suggests that, where digital policy is sufficiently functional and useful, its effect on service delivery may not depend strongly on variations in socio-cultural elements. In other words, users may respond more to the practical benefits of digital systems than to broader cultural differences once systems are operational and accessible.

Principal-Agent Theory also helps explain the findings. Digital policy can reduce information asymmetry by improving access to information, strengthening monitoring, supporting reporting, and facilitating citizen feedback (Jensen & Meckling, 1976). If these institutional mechanisms are strong, they may improve service delivery even where socio-cultural conditions vary. However, consistent with Fox (2007), transparency should be treated as a mechanism that requires clear information, accountability channels, and enforceable consequences rather than as an automatic outcome of digitization.

The results are also consistent with New Public Management theory. Hood (1991) emphasizes efficiency, accountability, performance measurement, and results-oriented governance. The strong direct effect of digital policy supports the view that formal reforms and managerial systems can substantially improve service delivery. The insignificant moderation effect further suggests that institutional design, implementation mechanisms, infrastructure, and management practices may be stronger determinants of service delivery outcomes than informal socio-cultural conditions.

Recent international evidence supports this interpretation. The OECD (2024) stresses that digital government performance depends on coherent governance, data-driven systems, proactive service design, and human-centered implementation. The World Bank (2024) similarly emphasizes digital foundations such as connectivity, platforms, skills, data systems, and institutional capacity. Thus, socio-cultural elements remain important for acceptance and sustainability, but they may not significantly alter the policy-service delivery relationship when the policy framework and implementation mechanisms are strong.

4.5 Critical Limitations and Areas for Strengthening

Several issues should be addressed to strengthen the article before journal submission. First, the manuscript should clearly reconcile the difference between the 247 returned questionnaires and the 242 valid demographic responses reflected in Table 1. Second, the full wording of the SCUL1-SCUL8 indicators should be provided in an appendix to support construct transparency. Third, the extremely high R-square and f-square values in the measurement model should be checked for redundancy or model specification concerns. Fourth, because the study used a cross-sectional survey, causal claims should remain cautious. Finally, future studies should test additional mediators or moderators such as institutional capacity, ICT infrastructure, leadership commitment, budget support, and digital skills that are essential part in encouraging inventiveness and boosting staff motivation, which ultimately results in improved service delivery and a higher level of satisfaction among the population (Irene et al., 2024).

5. Conclusion

The study concludes that digital policy is a significant predictor of public service delivery in selected district local governments in Uganda. The strong positive relationship indicates that well-implemented digital policies can enhance efficiency, transparency, responsiveness, accessibility, and coordination in local government service delivery. The findings also show that socio-cultural elements form a reliable and valid construct, reflecting organizational culture, trust, attitudes toward technology, social norms, and digital literacy.

However, socio-cultural elements did not significantly moderate the relationship between digital policy and public service delivery. This suggests that digital policy can improve service delivery

across varying socio-cultural conditions when adequate implementation mechanisms, institutional capacity, and technological systems are in place. Guided by TAM, Principal-Agent Theory, and NPM, the study concludes that perceived usefulness, accountability mechanisms, managerial reforms, and implementation capacity may be more influential than socio-cultural variation in explaining service delivery outcomes.

6. Policy Recommendations

District local governments should continue strengthening digital policy implementation because it has a direct and significant influence on service delivery. This requires clear implementation guidelines, adequate financing, interoperability standards, reliable ICT infrastructure, and continuous monitoring of digital service performance. In line with NPM principles, public institutions should embed digital reforms within performance management systems, accountability frameworks, and measurable service standards (Hood, 1991).

Local governments should invest in user-friendly digital systems that enhance perceived usefulness and ease of use, consistent with TAM (Davis, 1989). Digital platforms should be simple, accessible, multilingual where necessary, and supported by help desks or assisted digital service points. These measures can increase adoption among both public servants and citizens.

Transparency and accountability mechanisms should be strengthened through digital reporting, electronic feedback channels, open information portals, and service tracking systems. These mechanisms can reduce information asymmetry between citizens and public officials, as suggested by Principal-Agent Theory (Jensen & Meckling, 1976). However, transparency should be linked to institutional response mechanisms so that citizen feedback results in corrective action. Bolatito (2023) contends that governments must prioritise openness and accountability in public institutions by developing solid financial management systems, encouraging open data rules, and providing public access to information. This would facilitate enhanced oversight of governmental activities and diminish prospects for fraudulent practices.

Although socio-cultural elements were not a significant moderator, they remain important for sustainable digital transformation. District administrations should promote positive organizational cultures, digital literacy training, change management, trust-building, and public awareness campaigns. Greater investment should also be directed toward connectivity, cybersecurity, data governance, and technical support, as these foundational conditions are central to effective digital government (Ministry of ICT and National Guidance, 2023; World Bank, 2024).

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