Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 12 (December) (2025)

Enhancing Citizen Engagement through Digital Governance: Perceived Service Value as Mediator and Digital Infrastructure as Moderator

Raheela Shaheen (Corresponding Author)
M.Phil. Scholar, Department of Public Policy and Administration, Hazara University, Mansehra, Pakistan Email: mehtabkhan7346@gmail.com

Dr. Muhammad Waseem
Associate Professor, Department of Public Policy and Administration, Hazara University, Mansehra, Pakistan Email: mwaseem@hu.edu.pk

Dr. Syed Arif Hussain Shah
Controller of Examinations, Hazara University, Mansehra, Pakistan
Email: peaceful_rf@yahoo.com

Dr. Akhtar Nawaz
Lecturer, Department of Public Policy and Administration, Hazara University, Mansehra, Pakistan Email: akhtar_nawaz@hu.edu.pk

Muneeb Ur Rehman
M.Phil. Scholar, Department of Public Policy and Administration, Hazara University, Mansehra, Pakistan Email: muneebrehman44@gmail.com

Muavia Nawaz Khan
M.Phil. Scholar, Department of Public Policy and Administration, Hazara University, Mansehra, Pakistan Email: muavianawazkhan@gmail.com

ABSTRACT
Digital governance is a critical strategy for public sector modernization, aimed at improving service delivery and fostering citizen engagement. However, the effectiveness of digital initiatives depends on citizens' perceptions of service value and the quality of digital infrastructure. This study investigates the impact of digital governance on citizen engagement, with perceived service value as a mediator and digital infrastructure as a moderator. A survey of 300 respondents from the Hazara region of Pakistan was analyzed using Hayes' PROCESS macro. . Results provide empirical evidence that digital governance enhances citizen engagement via perceived service value, with the effect strengthened by better digital infrastructure. Findings offer practical insights for policymakers to optimize digital services and infrastructure investments.

Keywords: Digital Governance, Citizen Engagement, Perceived Service Value, Digital Infrastructure.

Introduction

Around the globe, more and more governments are turning to digital governance, or e-governance, to help them provide better services, boost transparency, ensure accountability, and get citizens involved (United Nations E-Government Survey, 2022). Tools like online tax websites, electronic payment systems, apps for citizen complaints,

ISSN Online: 3007-3154
ISSN Print: 3007-3146

and mobile public service applications have become key parts of how we govern today (Alcaide-Muñoz et al., 2024). The concept of citizen engagement, characterized by the active involvement of citizens in decision-making processes, the provision of feedback, and the collaborative development of policies, has been identified as a significant outcome stemming from successful digital transformation initiatives (Wirtz & Müller, 2022). However, it is imperative to acknowledge that the mere presence of digital tools does not inherently lead to increased engagement. Rather, the willingness of citizens to interact with digital governance systems is profoundly shaped by their perceptions of the service value, which encompasses aspects such as efficiency, convenience, trustworthiness, and transparency (Al-Qudah et al., 2023). Consequently, understanding the interplay between digital tools and citizen perceptions emerges as essential in fostering meaningful engagement. The integration of these elements highlights the necessity for digital governance frameworks to be designed with a focus on enhancing the perceived value of services to encourage citizen participation effectively. Thus, a holistic approach that considers both technological infrastructure and citizen-centered perceptions is required to truly capitalize on the benefits associated with digital transformation.

Another critical factor is digital infrastructure. Even well-developed digital services may be underutilized when internet access, device availability, and connectivity are insufficient (Bertot et al., 2021; ITU, 2023). Differences in infrastructure create digital divides that shape who can engage and benefit from digital governance. This study focuses on Pakistan's Hazara region, where digital governance adoption is growing but unevenly distributed across districts. By integrating public value theory and digital transformation models, this research investigates the relationships among digital governance, perceived service value, and citizen engagement, with digital infrastructure as a moderating factor. This study seeks to investigate how digital governance shapes citizen engagement within contemporary public service environments. Specifically, it examines the direct influence of digital governance on citizens' willingness to interact with and participate in digital public platforms. In addition, the study explores whether perceived service value serves as an underlying mechanism that translates digital governance efforts into higher levels of engagement. Finally, it assesses whether the availability and quality of digital infrastructure strengthens or weakens this mediating process. Collectively, these inquiries address three core questions: how digital governance affects citizen engagement, whether perceived service value mediates this relationship, and to what extent digital infrastructure moderates the mediated pathway.

Literature Review

Digital governance has become crucial for the current public administration, and governments are getting powerful ICT tools to improve the quality of services, and strengthen the citizen's relationship with the government. As citizens become more dependent on digital platforms, it is important to understand the factors that influence engagement in order to enhance transparency, accountability, and public value creation. Examining digital governance, perceived service value and digital infrastructure in conjunction is therefore important to addressing participation gaps and ensuring inclusive digital transformation.

Digital Governance and Citizens Engagement

Digital governance involves using ICT to enhance service delivery and citizen participation (CJR, 2023). Citizen engagement promotes transparency, trust and public

ISSN Online: 3007-3154
ISSN Print: 3007-3146

value. Co-production theory focuses on citizens as active partners in the design and implementation of services. Digital governance has become a revolutionary way of modernizing public administration that allows governments to harness ICTs to increase transparency, efficiency and interaction with citizens (Criado & Valenzuela, 2021). Through online portals, mobile applications, blockchain-enabled records, data analytics, and AI-driven public service systems, governments hope to create a more efficient process for administrative procedures and make them more accessible (Wirtz et al., 2023). These tools make it easier for two-way communication by allowing for the feedback mechanisms, online consultations, and real-time service updates. Citizen engagement, referred to as the active participation of citizens in policy processes, service evaluation and joint governance, often grows in contexts where digital tools alleviate bureaucratic burdens and create more responsiveness (OECD, 2023). When citizens feel that digital services are easy to access, transparent and reliable, then there is a significant increase in their willingness to participate. There is a strong empirical evidence to support this association. Reddick, Abdelsalam and Elkadi (2021) found that easy-to-use e-government services are crucial for increasing citizen participation. Similarly, Chatfield and Reddick (2022) demonstrated that digital platforms promote the active online participation of people, especially if governments are encouraging feedback and co-production. Janssen and van der Voort (2020) contend that the digital governance frameworks promote adaptive and responsive governance structures, enhancing engagement in a routine as well as crisis situation. More recently, Razzaque et al. (2024) reported that digital reforms promoting transparency and reduced transaction costs are directly associated with improving public engagement. Misuraca et al. (2023) further emphasize digital governance as the core of public value creation which serves as a major motivator factor for civic involvement. These studies collectively point out that digital governance is expected to have a positive impact on citizen engagement. Based on this evidence, the following hypothesis is proposed:

H1: Digital governance positively influences citizen engagement.

Perceived Service Value

Perceived service value is an evaluation of the benefits with respect to cost (Zeithaml, 1988). In digital governance, value can include convenience, time-saving, transparency and higher engagement is a motivator. Perceived service value is conceptualized as individual's assessment of benefits of a service relative to effort, time and cost involved in accessing that service (Zeithaml, 1988). In terms of digital governance, value can be defined as ease of use, time saving, accuracy, convenience, trust and transparency provided by digital platforms. As digital interactions become an increasingly more vital substitute for traditional bureaucratic processes, perceived value is a most important factor in determining user acceptance and continued engagement. Recent research projects demonstrate that the perceived value of the service has a significant impact on user's adoption of digital government services. Laha and Das (2023) concluded that the citizens to adopt digital services are more likely to perceive high value in terms of efficiency and convenience. Similarly, Kim and Park (2022) reported that perceived value enhances the user satisfaction and trust for digital public services. Pham (2022) confirms that perceived value is a powerful predictor of engagement behaviors of users. There is further literature to reinforce these findings. Oliveira et al. (2021) showed that perceived value is a direct determinant of the citizen's willingness to use government mobile applications. Wu and Chen (2023) provides evidence that perceived value is a central part of driving co-production and co-creation behaviors on digital platforms.

ISSN Online: 3007-3154
ISSN Print: 3007-3146

Alhujran et al. (2022) also indicates that value perceptions have an impact on political and policy engagement intentions, thus making the perceived value of services an important psychological mechanism. Due to its importance, perceived service value can be expected to have a significant impact on citizen engagement.

H2: Perceived service value has a significant positive impact on citizen engagement in digital government services.

As a result of this body of evidence, perceived service value is expected to play an important mediating role in digital governance outcomes.

Mediation Effect of Perceived Service Value

Digital governance increases perceived service value, which leads to citizen engagement. Public value theory implies that the level of participation increases when services provide tangible benefits. Public Value Theory therefore states that citizens interact more when they see the government services as providing value that improves their welfare or solves their problems (Moore, 1995). Digital governance can help build greater perceived value in a service by providing faster, more accessible, transparent and convenient services. When the citizens see these benefits, there is more motivation to participate with the government platforms. Empirical studies are consistent with the mediating role of perceived value. Perceived service value was significantly related to citizen engagement by mediating the relationship between e-government service quality and citizen engagement (Kardan and Sigar, 2023). Li and Shang (2022) reported the perceived value explains the link between quality of digital platforms and increased rate of participation on the Internet. Similarly, Papadomichelaki and Mentzas (2021) made evident that e-service value enhances trust and improves the engagement of users towards digital government systems. Collectively, these results are firming up the argument that perceived value of the service mediates the relationship between digital governance and engagement of citizens.

H3: The perceived service value has a significant mediating effect on the link between digital governance and citizens engagement.

Moderator: Digital Infrastructure

Digital infrastructure includes internet access, devices and system reliability which builds the impact of digital governance on perceived value and engagement (JMI, 2022). Digital infrastructure such as broadband access, high-speed internet, mobile network coverage, device ownership and system reliability are the fundamental components in helping citizens access and reap the benefits of digital governance services (World Bank, 2023). When citizens do not have access to stable internet connection or the devices, no matter how well-designed digital platforms may be, it becomes ineffective, leading to the increase of the digital divide. High-quality infrastructure improves access and minimizes service delays and improves system performance to amplify the perceived value of digital services. Baller and Dutta (2022) state that digital infrastructure is an important enabler of digital transformation as well as public engagement. Alawneh et al. (2023) found that digital infrastructure moderates the relationship between e-government service quality and the perceived value of the service to increase positive outcomes when digital infrastructure is strong. Das et al. (2022) further reported the existence of infrastructure disparities in South Asia that have a significant impact on the digital service adoption behaviors. Kumar and Singh (2024) also showed that infrastructure conditions have an amplifying effect of ICT initiatives on citizen engagement. Therefore, digital infrastructure is anticipated to temper both a direct impact of digital governance on

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 12 (December) (2025)

perceived value and the indirect route by which perceived value boosts citizen engagement.

H4: Digital infrastructure positively moderates the relationship between digital governance and citizen engagement.

Theoretical Framework

The study integrates Public Value Theory and Technology Acceptance/UTAUT models (see, Figure 1).

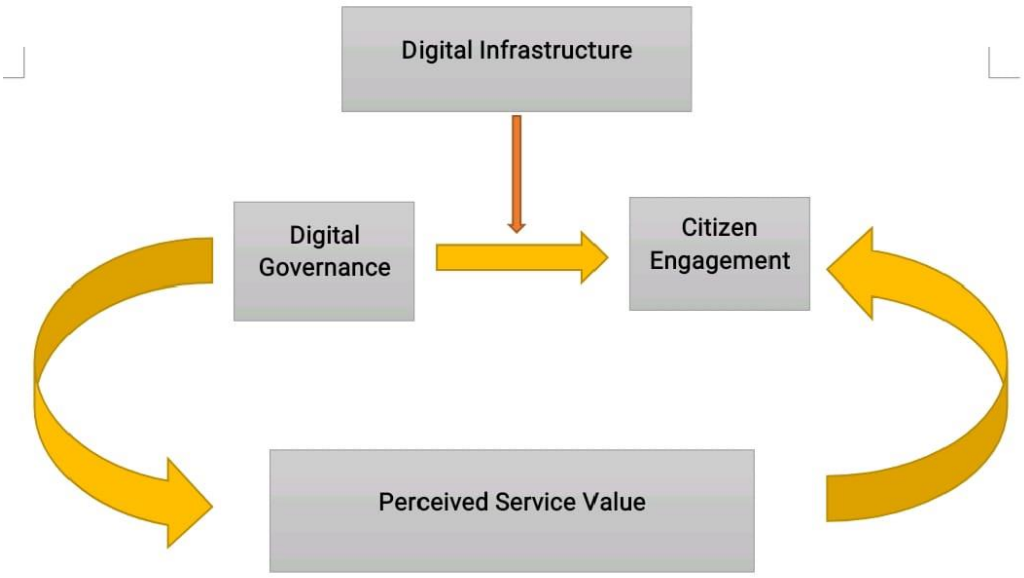

Figure 1: Conceptual Framework

Source: Author's work.

Hypotheses

The study has the following research hypotheses, i.e.,

H1: Digital governance positively influences citizen engagement.

H2: Perceived service value has a significant positive effect on citizen engagement with digital government services.

H3: Perceived service value significantly mediates the relationship between digital governance and citizen engagement.

H4: Digital infrastructure positively moderates the relationship between digital governance and citizen engagement.

Methods

This study used a quantitative research design which is appropriate for empirically investigation of the direct, mediating and moderating relationships among digital governance (DG), perceived service value (PSV), citizen engagement (CE), and digital infrastructure (DI). A structured survey method was followed to gather primary information from the citizens of the Hazara region of Khyber Pakhtunkhwa, Pakistan. The target population included persons living in the districts of Abbottabad, Haripur, Mansehra, Battagram and Torghar, who had lived in the region for at least twelve months

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 12 (December) (2025)

and had used one or more of the e-government services during the previous year. Eligible services included online tax filing solutions, university salary tax verification solutions, CNIC-related digital services, electronic payment gateways, complaint management solutions and government mobile applications such as the Pakistan Citizen Portal. Data collection was carried out by self-administered questionnaires in both urban and rural areas to represent the demographic, socioeconomic, and digital literacy profiles of the participants. Participants were informed about the aims of the study, voluntary participation and confidentiality precautions. Ethical permission was obtained from the Research Ethics Committee of Hazara University before data collection.

A multi-stage stratified random sampling design was adopted to increase the representativeness and generalizability of the findings (see, Table 1). The sampling process included: (1) stratification of the population according to district; (2) further stratification according to the urban and rural clusters; (3) random selection of residential clusters from within each stratum; and (4) systematic sampling of households and workplaces to identify eligible respondents. Sample allocation across districts was proportional to population size, as a result, the sample distribution turned out to be as follows: Abbottabad 28% (n = 84), Haripur 23% (n = 69), Mansehra 35% (n = 105), Battagram 11% (n = 33), and Torghar 4% (n = 12) which added up to a total targeted sample of 303 respondents. After the data were screened for missing values, missing-value assessment, and outlier treatment, 300 valid data were retained for further analysis.

Table 1: Sample Allocation and Size

Districts	**Population**	**Allocation (%)**	**Sample Size**
Abbottabad	1,419,072	28%	84
Haripur	1,174,783	23%	69
Mansehra	1,797,177	35%	105
Battagram	554,133	11%	33
Torghar	200,445	4%	12
Total	5,145,610	100%	303

Note: *A total of 300 usable responses were retained after data cleaning.

To test the hypothesized relationships, Hayes' PROCESS macro for SPSS was applied; Model 4 was used to analyze the mediating role of PSV, while Model 1 assessed the moderating influence of DI. The analytical technique is well suited to decomposing direct and indirect effects and is widely recommended for cross-sectional mediation and moderation studies in governance and public administration research.

Measures and Instruments

All variables were measured using validated multi-item scales, adapted to the digital governance context. A 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) was used for all items (see, Table 2).

Table 2:Measures and Instruments

Variables	**Items / Indicators**
Digital Governance (DG)	Accessibility, Responsiveness, Interactivity, Transparency

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 12 (December) (2025)

Variables	Items / Indicators
Perceived Service Value (PSV)	Convenience, Time-saving, Overall Benefit
Citizen Engagement (CE)	Frequency of interaction, Feedback, Participation
Digital Infrastructure (DI)	Internet access, Device availability, Reliability

Reliability and Validity

All constructs demonstrate strong internal consistency (Cronbach's $\alpha > 0.80$) and adequate convergent validity (AVE > 0.50, CR > 0.70). These results confirm that the measurement scales reliably capture the intended constructs (see, Table 3).

Table 3:Reliability and Validity

Construct	Cronbach's α	CR	AVE
Digital Governance	0.88	0.90	0.63
Perceived Service Value	0.85	0.88	0.61
Citizen Engagement	0.87	0.89	0.64
Digital Infrastructure	0.82	0.86	0.59

Data Analysis

Data were analyzed using SPSS v26, including descriptive statistics, reliability tests, and Hayes' PROCESS macro to test:

Mediation (Model 4): DG → PSV → CE

Moderation (Model 1): DG × DI → PSV

Interpretations focused on direct, indirect, and conditional effects, using 95% confidence intervals and $p < 0.05$ significance levels.

Results and analysis

Demographic Profile of Respondents

The demographic data in Table 4 indicate a balanced gender distribution (55% male, 45% female) and a predominance of respondents aged 26–35 (35%). Most participants hold a Bachelor's degree (40%), with 25% having a Master's or higher. The majority report medium digital literacy (55%), and 60% reside in urban areas, reflecting the target population for digital governance services in the Hazara region.

Table 4: Demographic Profile of Respondents

Factors	Category	n	%
Gender	Male	165	55.0
	Female	135	45.0
Age	18–25	84	28.0
	26–35	105	35.0
	36–50	75	25.0
	51+	36	12.0
Education	Primary	30	10.0
	Secondary	75	25.0

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 12 (December) (2025)

Factors	Category	n	%
	Bachelor	120	40.0
	Master/Above	75	25.0
Digital Literacy	Low	45	15.0
	Medium	165	55.0
	High	90	30.0
Residence	Urban	180	60.0
	Rural	120	40.0

Descriptive Statistics

Descriptive statistics in Table 5 suggest that respondents generally perceive digital governance positively (M = 4.12) and report high perceived service value (M = 4.05). Citizen engagement scores are moderately high (M = 3.98), indicating active participation with e-services. Digital infrastructure is adequate (M = 3.85), providing a suitable context for examining moderation effects.

Table 5: Descriptive Statistics

Variables	Mean	SD	Min	Max
Digital Governance	4.12	0.65	2.5	5.0
Perceived Service Value	4.05	0.70	2.0	5.0
Citizen Engagement	3.98	0.75	1.5	5.0
Digital Infrastructure	3.85	0.80	1.0	5.0

Mediation Analysis (PROCESS Model 4)

Perceived service value partially mediates the relationship between digital governance and citizen engagement (see, Table 6). The indirect effect (β = 0.34, 95% CI [0.25, 0.44]) indicates that higher perceptions of servicevalue significantly enhance engagement, confirmingH3.

Table 6: Mediation of Perceived Service Value between Digital Governance and Citizen Engagement

Effect Type	Path	Effect (β)	SE	T	p	95% CI
Direct	DG → CE	0.22	0.06	3.67	<0.001	[0.10, 0.34]
Indirect	DG → PSV → CE	0.34	0.05	—	—	[0.25, 0.44]
Total	DG → CE (Total Effect)	0.56	0.07	8.00	<0.001	[0.42, 0.70]

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 12 (December) (2025)

4.4 Moderation Analysis (PROCESS Model 1)

Digital infrastructure significantly moderates the relationship between digital governance and perceived service value (see, Table 7). The positive interaction term ($\beta = 0.18$, $p < 0.01$) indicates that the effect of digital governance on perceived value strengthens as infrastructure quality improves, supporting H4.

Table 7: Moderating Effect of Digital Infrastructure on DG → PSV

Predictor	B	SE	t	P	95% CI
DG	0.62	0.08	7.75	<0.001	[0.46, 0.78]
DI	0.15	0.07	2.14	0.034	[0.01, 0.29]
DG × DI	0.18	0.06	3.00	0.003	[0.06, 0.30]

Discussion

The findings of this study offer pertinent information on how digital governance influences citizen engagement in the modern public service setting. First, the results confirm that digital governance has a significant positive influence on the willingness of citizens to interact and participate in digital public platforms (Porumbescu, 2016; Tolbert & Mossberger, 2006; Reddick et al., 2020). This is in line with the evidence from around the world that shows that well-designed digital systems can reduce administrative burdens, enhance transparency and stimulate active participation. The study thus succeeds in fulfilling the objective in the first place which is to show that digital governance is an important driver of modern civic engagement.

Second, the findings reveal that perceived service value is an important mediating variable in the correlation between digital governance and citizen engagement. The citizens who feel that the digital public services are useful, convenient, transparent, and reliable will adopt and use them more. The observation is in line with the value theory (Zeithaml, 1988) and the empirical studies of Wang, Chen, and Xu (2019) and Sanchez-Torres and Miles (2017). The findings are in line with the second research objective as they show that the perception of the value by citizens engages the technological improvements into significant behavioral responses. Moreover, the mediating effect of perceived service value is also consistent with Public Value Theory (Moore, 1995) and Technology Acceptance views to highlight the importance of perceived benefits as determinants of user motivation and engagement (Davis, 1989; Venkatesh, Morris, Davis, and Davis, 2003).

Thirdly, the research supports the fact that digital infrastructure has a strong moderating effect in the mediated relationship that exists between digital governance and perceived service value and citizen engagement. The beneficial role of digital governance in perceived value and, hence, engagement is intensified in a scenario where internet connectivity, access to devices, and system reliability are good. Sufficient literature proves that a strong infrastructure improves the provision and the perceived quality of online public services (Chen, Zhang, and Xu, 2020; Ahmad, Qureshi, and Saeed, 2022; Bertot, Jaeger, and Grimes, 2010). On the other end, poor infrastructure demeans this chain of events, implying that even highly developed digital platforms cannot contribute to the creation of social value without the technological support. This observation has a direct response to the third research objective because it emphasizes the digital infrastructure as a key enabling aspect of effective digital governance.

Collectively, these results combine the logic of the Public Value Theory with Technology Acceptance perspectives to show that citizen engagement is the result of a process of value creation and technological enablement joined together. Digital governance may start this process but depends upon the perceived value created by the

ISSN Online: 3007-3154
ISSN Print: 3007-3146

users and infrastructural conditions that can support their digital participation for its success. The study therefore adds to the theoretical understanding by showing why digital governance improves engagement (on the basis of perceived value) and when the effect becomes greater (under high-quality digital infrastructure).

Theoretical and Practical Implications

The results of this study make a number of important theoretical contributions. By combining Public Value Theory perspectives with Technology Acceptance based perspectives, the research contributes to a better understanding of the impact of digital governance on citizen engagement. Specifically, the study contributes to the existing literature by highlighting the role of perceived service value as an important mediating mechanism explaining the process of translation of digital governance initiatives into meaningful civic participation. Additionally, identification of digital infrastructure as a moderating factor enriches theoretical models currently under way, by identifying the contextual conditions under which digital governance efforts become more or less effective. Together, these contributions support bridging the gaps between the public administration, digital governance and technology adoption research.

From a practical perspective the results give hard and ready-to-use lessons for governments and policy makers wanting to improve the digital participation. The positive effects of digital governance and perceived service value indicate that public institutions will need to focus on delivering high quality digital services, being reliable, accessible and user-centred. Equally important is the need for investing in strong digital infrastructure, as solid connectivity and accessibility of devices goes a long way in enhancing the engagement of citizens with digital platforms. Policymakers can use these findings to design more effective digital strategies, allocate resources more effectively, and design interventions that promote more citizen involvement in digital public services.

Limitations and Future Research Directions

This study, while providing valuable insights on how digital governance is improving citizen engagement, comes with several limitations that should be acknowledged. First, its cross-sectional design limits possibilities for drawing causal inferences as data was captured at a single point in time and future longitudinal or experimental research could provide stronger evidence in terms of causal pathways between digital governance initiatives and engagement outcomes. Second, the inclusion of self-reported survey measures might result in social desirability bias or inaccuracies in responses, implying a need for further research in this field where behavioral measures such as digital platform usage measures might be added to complement and validate self-reported perceptions. Third, the geographical focus on the Hazara region of Pakistan, though valuable for the depth of context, limits the generalisability of findings in other regions or countries with different digital infrastructure capacities and governance systems. Comparative studies in different geographical contexts would be useful for bringing out the contextual differences in digital governance effectiveness.

In addition, the study only considered one mediator (perceived service value) and one moderator (digital infrastructure), although variables such as digital literacy, trust in government, citizen satisfaction, and specific aspects of the quality of service may also determine engagement; future research should investigate such variables to develop a more complete explanatory model. Finally, the study is based on the assumption of level of access to and familiarity with digital services, potentially under representing citizens

ISSN Online: 3007-3154
ISSN Print: 3007-3146

with little digital access. Future research could focus on interventions designed to increase digital inclusion and explore their effects on engagement behaviours. In order to push the boundaries of the research, scholars are urged to conduct longitudinal analyses of their research, further examine individual psychological and contextual mediators and moderators, conduct cross-regional and cross-country comparisons, and use real-time behavioral analysis data in conjunction with survey-based data to enhance the robustness and validity of digital governance research.

References

Ahmad, M., Qureshi, M. I., & Saeed, S. (2022). Digital infrastructure and citizen engagement: Evidence from public sector organizations. Government Information Quarterly, 39(1), 101639. https://doi.org/10.1016/j.giq.2021.101639

Alawneh, A., Al-Refai, H., & Batiha, K. (2023). Digital infrastructure and e-government service quality: Understanding moderating effects. International Journal of E-Government Research, 19(2), 45–62.

Alcaide-Muñoz, L., Rodríguez Bolívar, M. P., & López Hernández, A. M. (2024). Digital platforms and public value creation: Emerging trends in e-governance. Government Information Quarterly, 41(1), 101–124. https://doi.org/10.1016/j.giq.2023.102890

Alhujran, O., Al-Debei, M. M., Chatfield, A. T., & Migdadi, M. (2022). Political engagement and digital public services: The role of perceived value. Information Systems Frontiers, 24(6), 1701–1717. https://doi.org/10.1007/s10796-021-10224-9

Al-Qudah, A. A., Al-Hashimi, M., & Hussein, R. S. (2023). Determinants of citizens' intention to use digital government services. Journal of Public Affairs, 23(3), e2897. https://doi.org/10.1002/pa.2897

Baller, S., & Dutta, S. (2022). Digital readiness and transformation: Global insights. World Economic Forum Report. https://www.weforum.org

Bertot, J. C., Estevez, E., & Janowski, T. (2021). Universal access, digital divides, and the role of infrastructure in e-government. Telecommunications Policy, 45(5), 102–120.

Chatfield, A. T., & Reddick, C. G. (2022). Digital public platforms: Citizen participation and co-production in the era of big data. Government Information Quarterly, 39(4), 101–179.

Chen, Y., Zhang, S., & Xu, L. D. (2020). Information infrastructure and digital government performance: A study of the moderating effect of citizen participation. Information & Management, 57(8), 103337. https://doi.org/10.1016/j.im.2020.103337.

CJR. (2023). Digital governance for public service transformation: Annual review 2023. Center for Journalistic Research.

Criado, J. I., & Valenzuela, N. (2021). Digital public innovation: Understanding the adoption of emerging technologies in government. Public Management Review, 23(10), 1482–1501. https://doi.org/10.1080/14719037.2020.1784844

Das, D., Sharma, R., & Devi, L. (2022). Digital infrastructure gaps and ICT adoption in South Asia. Information Development, 38(3), 345–360.

International Telecommunication Union. (2023). Global connectivity report 2023. https://www.itu.int

Janssen, M., & van der Voort, H. (2020). Agile and adaptive governance in digital government. Government Information Quarterly, 37(3), 101–385.

ISSN Online: 3007-3154
ISSN Print: 3007-3146

Vol. 3 No. 12 (December) (2025)

JMI. (2022). Digital infrastructure readiness report. Journal of Modern Informatics.

Kardan, S., & Sigar, E. (2023). Exploring value perception in digital public services. Journal of Information Systems and e-Government, 11(1), 22–38.

Kim, S., & Park, H. (2022). User trust and perceived value in digital government service use. Information Polity, 27(4), 537–552.

Kumar, P., & Singh, R. (2024). ICT initiatives and civic engagement: The moderating role of infrastructure. Asian Journal of Public Administration, 46(1), 83–102.

Laha, A., & Das, S. (2023). Drivers of digital government service adoption. Information Technology for Development, 29(2), 396–414.

Li, Y., & Shang, R. (2022). Platform quality and online civic engagement: The mediating role of perceived value. Digital Government: Research and Practice, 3(4), 1–13.

Misuraca, G., Savoldelli, A., & Pasi, G. (2023). Digital governance and public value creation in smart government ecosystems. Information Systems Frontiers, 25(2), 455–470.

Moore, M. H. (1995). Creating public value: Strategic management in government. Harvard University Press.

OECD. (2023). Digital government index 2023: Citizen participation and transparency. Organisation for Economic Co-operation and Development. https://www.oecd.org

Oliveira, T., Thomas, M., Baptista, G., & Campos, F. (2021). Mobile government adoption: Perceived value and citizen decision-making. Information Systems Journal, 31(3), 410–444.

Papadomichelaki, X., & Mentzas, G. (2021). E-government service evaluation and perceived value. Government Information Quarterly, 38(2), 101–564.

Pham, L. (2022). Understanding user engagement in digital public platforms: The role of perceived value. Journal of Public Administration and Digital Innovation, 4(1), 15–29.

Porumbescu, G. A. (2016). Does government transparency affect perceived government performance? International Review of Administrative Sciences, 82(2), 265–284. https://doi.org/10.1177/0020852314563020.

Razzaque, M. A., Rahman, M., & Karim, S. (2024). Transparency reforms and digital public engagement. Government Information Quarterly, 41(2), 102–312.

Reddick, C. G., Abdelsalam, H., & Elkadi, H. (2021). The influence of e-government service quality on citizen participation. Information Polity, 26(2), 159–174.

Sánchez-Torres, J. A., & Miles, I. (2017). Value creation and digital government adoption: The role of user perceptions. Government Information Quarterly, 34(3), 415–423. https://doi.org/10.1016/j.giq.2017.06.004

Tolbert, C. J., & Mossberger, K. (2006). The effects of e-government on trust and confidence in government. Public Administration Review, 66(3), 354–369. https://doi.org/10.1111/j.1540-6210.2006.00594.x

United Nations. (2022). UN e-government survey 2022: The future of digital government. United Nations Department of Economic and Social Affairs. https://publicadministration.un.org

Wang, Y., Chen, H., & Xu, H. (2019). Digital public service quality and citizen engagement: Evidence from e-government platforms. Government Information Quarterly, 36(2), 276–288. https://doi.org/10.1016/j.giq.2018.10.004.

Wikipedia. (2023). Co-production (public services). https://en.wikipedia.org

ISSN Online: 3007-3154
ISSN Print: 3007-3146

Vol. 3 No. 12 (December) (2025)

Wirtz, B. W., & Müller, W. (2022). Citizen engagement in digital governance: A public value perspective. International Review of Administrative Sciences, 88(4), 789–809.

Wirtz, B. W., Weyerer, J. C., & Rösch, M. (2023). Digital government: Applications, AI adoption, and public value creation. Government Information Quarterly, 40(1), 101–435.

World Bank. (2023). Digital infrastructure and inclusive development: 2023 report. https://www.worldbank.org

Wu, I., & Chen, S. (2023). Co-production on digital platforms: The role of perceived value and user experience. Journal of Service Management, 34(2), 251–267.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value. Journal of Marketing, 52(3), 2–22. https://doi.org/10.1177/002224298805200302