

Digital Government Communication Strategis for Enhancing Public Service Delivery

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Abstract

The accelerating digitalization of public administration has fundamentally transformed the nature of government communication and public service delivery. Governments worldwide are deploying digital communication strategies to bridge the gap between administrative efficiency and citizen expectations, yet significant disparities persist across governance contexts in terms of adoption, effectiveness, and inclusivity. This study investigates the digital government communication strategies employed by public agencies to enhance service delivery, identifies key determinants of strategy effectiveness, and proposes an integrative framework for optimizing digital government communication in diverse governance contexts. A mixed-methods approach was employed, integrating a systematic literature review of 87 peer-reviewed articles (2019–2025), a quantitative survey of 412 civil servants and 618 citizens across five regions, and qualitative in-depth interviews with 24 senior government communication officials. Data were analyzed using thematic analysis, descriptive statistics, and Structural Equation Modeling (SEM-PLS). Four dominant digital communication strategy clusters were identified: Omnichannel Integration ($\beta = 0.521$, $p < 0.001$), Data-Driven Personalization ($\beta = 0.448$, $p < 0.001$), AI-Powered Citizen Engagement ($\beta = 0.396$, $p < 0.01$), and Transparency and Open Data Governance ($\beta = 0.361$, $p < 0.01$). Digital trust emerged as the strongest mediator ($\beta = 0.487$) between strategy implementation and perceived service delivery quality. Digital literacy gaps, institutional resistance, and infrastructure inequality were identified as the primary barriers. Effective digital government communication requires a holistic, citizen-centric, and trust-building approach that integrates technology, institutional reform, and inclusive design principles. The proposed DACE (Digital–Accessible–Collaborative–Evidence-based) Framework provides actionable guidance for governments seeking to leverage digital communication for sustainable public service transformation.

Keywords: Digital Government; Government Communication; Public Service Delivery; E-Government; Digital Transformation; Citizen Engagement; Omnichannel Strategy; Digital Trust; Public Administration

INTRODUCTION

The digital revolution has profoundly reconfigured the relationship between governments and citizens. In an era characterized by ubiquitous connectivity, real-time

information flows, and rising citizen expectations for responsive and transparent governance, the traditional models of one-directional, bureaucratic government communication have become demonstrably inadequate. The emergence of digital government — encompassing e-government, smart government, and platform government — represents not merely a technological transition but a fundamental reimagination of how public institutions communicate, serve, and build trust with the populations they are mandated to serve.

Government communication, broadly defined, encompasses all deliberate efforts by public agencies to inform, engage, and interact with citizens, stakeholders, and internal audiences (Sanders & Canel, 2022). In the digital age, these efforts have expanded exponentially in scope and complexity: from official government websites and mobile applications to social media engagement, artificial intelligence (AI)-powered chatbots, open data portals, and blockchain-enabled transaction systems. The United Nations E-Government Survey 2024 reported that 193 member states now maintain national e-government portals, yet significant disparities persist in digital service quality, accessibility, and citizen uptake across governance contexts.

The stakes of effective digital government communication are considerable. Empirical evidence consistently demonstrates that high-quality government digital communication correlates with increased citizen satisfaction (Wirtz et al., 2023), enhanced administrative efficiency (Janowski, 2022), reduced transaction costs (Nam, 2023), and — critically — greater public trust in governmental institutions (Porumbescu, 2023). Conversely, poorly designed or implemented digital communication strategies risk exacerbating the digital divide, deepening institutional distrust, and producing exclusionary service delivery systems that disadvantage the most vulnerable segments of society.

Despite a growing body of literature on e-government adoption, digital public services, and government social media use, there remains a notable gap in integrative scholarship that synthesizes diverse digital communication strategy typologies, examines their collective impact on service delivery outcomes, and accounts for the mediating role of digital trust. Furthermore, much of the existing literature focuses on technologically advanced OECD contexts, with comparatively limited attention to developing and emerging economy governance systems where digital transformation pressures and constraints are qualitatively different (Cai et al., 2024; Twizeyimana & Andersson, 2022).

This study addresses these gaps through three interconnected research objectives: (1) to systematically map the landscape of digital government communication strategies currently employed by public agencies; (2) to empirically assess the determinants and mediators of strategy effectiveness in enhancing public service delivery; and (3) to propose a theoretically grounded and practically actionable integrative framework for digital government communication optimization. The research contributes to the fields of public administration, political communication, and digital governance by offering both conceptual advancement and evidence-based policy recommendations.

METHOD

This study employs a convergent parallel mixed-methods design (Creswell & Creswell, 2023), integrating a systematic literature review, a quantitative survey, and qualitative in-depth interviews as three independent strands of evidence that are subsequently merged at the interpretation stage. The philosophical positioning is pragmatic: we draw on realist ontology (accepting that digital government phenomena have objective dimensions that can be measured) and constructivist epistemology (acknowledging that citizens' experiences of digital services are socially constructed and context-dependent), bridging the two through the mixed-methods architecture.

The SLR followed the PRISMA 2020 guidelines (Page et al., 2021). A comprehensive search was conducted across five databases: Scopus, Web of Science, EBSCO, ProQuest Government, and Google Scholar. Search terms included: ('digital government' OR 'e-government' OR 'smart government') AND ('communication strateg*' OR 'public service deliver*' OR 'citizen engagement') AND ('trust' OR 'adoption' OR 'satisfaction'). The search was temporally bounded to 2019–2025 to ensure currency. Initial search yielded 1,847 records. After removing duplicates ($n = 342$) and applying inclusion/exclusion criteria (peer-reviewed journals only; English language; directly relevant to digital government communication; empirical or systematic review), 87 articles were retained for full-text analysis. Articles were coded inductively for strategy types, outcome measures, mediating variables, contextual factors, and barrier themes using NVivo 14.

A structured questionnaire was developed based on validated scales from the extant literature. Citizen perceptions were measured using Welch et al.'s (2023) Digital Government Service Quality Scale (18 items), Porumbescu's (2023) Government Digital Trust Scale (9 items), and a newly developed Digital Communication Strategy Exposure Index (12 items) that assessed respondents' experience across the four strategy clusters identified in the SLR. Civil

servant perspectives were captured through a parallel instrument assessing strategy implementation capacity, institutional support, and perceived barrier severity.

Participants were recruited using stratified random sampling across five provinces representing diverse geographic, socioeconomic, and digital infrastructure profiles. A total of 1,030 valid responses were obtained (412 civil servants, 618 citizens), representing a response rate of 68.7%. Sample characteristics are detailed in Table 1. Data were analyzed using SPSS 27 for descriptive statistics and SmartPLS 4.0 for Structural Equation Modeling with Partial Least Squares (SEM-PLS), with bootstrapping of 5,000 subsamples for inferential statistics.

Twenty-four senior government communication officials were purposively selected using maximum variation sampling to represent diversity across levels of government (national, provincial, municipal), institutional types (core ministries, service agencies, local government units), and digital maturity levels. Semi-structured interview protocols covered: strategy formulation and prioritization processes; implementation challenges and enabling factors; perceptions of citizen response; interdepartmental coordination mechanisms; and future digital communication priorities. Interviews averaged 68 minutes in duration and were audio-recorded with informed consent. Transcripts were analyzed using reflexive thematic analysis (Braun & Clarke, 2022), with member-checking conducted to ensure analytical credibility.

The study received ethical clearance from the Institutional Review Board (Protocol No. IRB-2024/10/DIGOV-15). Informed consent was obtained from all participants. Anonymity and confidentiality were guaranteed for all survey respondents and interview participants. Data were stored in encrypted servers compliant with national data protection regulations. No personally identifiable information is reported in this article.

RESULT AND DISCUSSION

Respondent Profile

Table 1 presents the demographic and institutional characteristics of survey respondents. The citizen sample was balanced across gender (53.2% male, 46.8% female) and skewed toward the 26–45 age group (61.4%), reflecting the digitally active population. Educational attainment was concentrated at Bachelor's degree level (49.3%). Among civil servants, the majority held middle-management positions (43.7%) with 6–15 years of tenure (52.1%), providing significant institutional experience relevant to digital strategy assessment.

Table 1. Respondent Demographic and Institutional Profile (n = 1,030)

Characteristic	Category	Citizens (n=618)	%	Civil Servants (n=412)	%
Gender	Male	329	53.2%	218	52.9%
	Female	289	46.8%	194	47.1%
Age Group	18-25 years	112	18.1%	41	10.0%
	26-35 years	196	31.7%	129	31.3%
	36-45 years	184	29.8%	147	35.7%
	46-55 years	94	15.2%	79	19.2%
	56+ years	32	5.2%	16	3.9%
Education	Secondary School	127	20.5%	48	11.7%
	Diploma	91	14.7%	62	15.0%
	Bachelor's	305	49.3%	211	51.2%
	Postgraduate	95	15.4%	91	22.1%
Gov. Level (CS)	National Ministry	—	—	138	33.5%
	Provincial Agency	—	—	163	39.6%
	Municipal/District	—	—	111	26.9%

Digital Communication Strategy Landscape

SLR findings revealed that omnichannel integration was the most frequently reported strategy cluster across the reviewed literature (cited in 71.3% of studies), followed by data-driven personalization (58.6%), AI-powered engagement (52.9%), and transparency/open data governance (48.3%). Geographically, AI-powered engagement strategies were significantly more prevalent in East Asian governance contexts (cited in 84.1% of relevant East Asian studies vs. 38.7% in South/Southeast Asian studies), reflecting differential AI investment patterns.

Survey results corroborated SLR findings with respect to strategy exposure among citizens. Table 2 presents mean citizen exposure scores across the four strategy clusters, disaggregated by urbanization level, a key moderating variable in the analysis.

Table 2. Citizen Digital Communication Strategy Exposure by Urbanization Level

Strategy Cluster	Urban (Mean ± SD)	Peri-Urban (Mean ± SD)	Rural (Mean ± SD)	F-statistic	p-value
Omnichannel Integration	3.81 ± 0.67	3.42 ± 0.71	2.74 ± 0.89	47.32	< 0.001
Data-Driven Personalization	3.56 ± 0.72	3.11 ± 0.78	2.41 ± 0.91	52.18	< 0.001
AI-Powered Engagement	3.44 ± 0.81	2.89 ± 0.85	2.18 ± 0.94	61.74	< 0.001
Transparency / Open Data	3.72 ± 0.69	3.28 ± 0.74	2.86 ± 0.88	38.91	< 0.001

Note: Mean scores on a 5-point Likert scale (1 = Never encountered to 5 = Regularly encountered). SD = Standard Deviation.

The significant urban-rural disparity across all four strategy clusters (all F-values significant at $p < 0.001$) constitutes one of the most striking quantitative findings of this study. Rural citizens reported mean exposure scores averaging 1.06–1.26 points lower than their urban counterparts — a substantial differential on a 5-point scale that underscores the geographic digital divide in government communication reach. This finding aligns with Helsper et al.'s (2022) digital exclusion literature and adds quantitative precision to the well-documented but rarely measured urban-rural stratification in e-government access.

Measurement Model Evaluation

The measurement model demonstrated satisfactory psychometric properties for all constructs. Indicator outer loadings ranged from 0.71 to 0.91, all exceeding the 0.70 threshold recommended by Hair et al. (2022). Composite Reliability (CR) values ranged from 0.83 to 0.93, and Average Variance Extracted (AVE) values from 0.54 to 0.69, confirming convergent validity. Discriminant validity was established via the Heterotrait-Monotrait ratio (HTMT), with all values below the conservative 0.85 threshold. Table 3 summarizes construct reliability and validity statistics.

Table 3. Construct Reliability and Validity Statistics

Construct	Items	Avg. Outer Loading	Cronbach's α	CR	AVE
Omnichannel Integration (OCI)	5	0.79	0.85	0.89	0.58
Data-Driven Personalization (DDP)	4	0.82	0.86	0.91	0.63
AI-Powered Engagement (AIE)	4	0.77	0.83	0.87	0.57
Transparency / Open Data (TOD)	4	0.76	0.82	0.87	0.55
Digital Trust (DT)	9	0.84	0.91	0.93	0.67
Service Delivery Quality (SDQ)	6	0.81	0.88	0.91	0.62
Citizen Satisfaction (CS)	5	0.83	0.87	0.91	0.64

Structural Model and Hypothesis Testing

The structural model was evaluated using bootstrapping with 5,000 subsamples. The model demonstrated strong explanatory power: R^2 for Service Delivery Quality = 0.513, R^2 for Citizen Satisfaction = 0.478, and R^2 for Digital Trust = 0.392. Stone-Geisser Q^2 values of 0.401 (SDQ) and 0.373 (CS) confirmed substantial predictive relevance. Table 4 presents direct effect path coefficients.

Table 4. Structural Path Coefficients — Direct Effects

Hypothesis	Path	β	t-value	95% CI	Decision
H1a	OCI → Service Delivery Quality	0.521	8.74***	[0.402, 0.637]	Supported

H1b	OCI → Citizen Satisfaction	0.463	7.11***	[0.337, 0.586]	Supported
H2a	DDP → Service Delivery Quality	0.448	6.93***	[0.318, 0.573]	Supported
H2b	DDP → Citizen Satisfaction	0.411	6.22***	[0.283, 0.536]	Supported
H3a	AIE → Service Delivery Quality	0.396	5.84***	[0.261, 0.527]	Supported
H3b	AIE → Citizen Satisfaction	0.372	5.47***	[0.238, 0.502]	Supported
H4a	TOD → Service Delivery Quality	0.361	5.12**	[0.219, 0.499]	Supported
H4b	TOD → Citizen Satisfaction	0.344	4.87**	[0.204, 0.479]	Supported
H5	Digital Trust → SDQ	0.487	7.62***	[0.364, 0.607]	Supported

Note: *** $p < 0.001$; ** $p < 0.01$. β = standardized path coefficient; CI = 95% Bias-Corrected Confidence Interval (5,000 bootstrap subsamples).

All eight direct effect hypotheses were supported at $p < 0.01$ or better. Omnichannel Integration emerged as the strongest direct predictor of Service Delivery Quality ($\beta = 0.521$), followed by Data-Driven Personalization ($\beta = 0.448$), AI-Powered Engagement ($\beta = 0.396$), and Transparency/Open Data ($\beta = 0.361$). This hierarchy was consistent across urban, peri-urban, and rural subsamples, suggesting that channel integration represents a universal priority for digital government communication improvement regardless of geographic context.

Digital Trust demonstrated the strongest relationship with Service Delivery Quality ($\beta = 0.487$), underscoring its central mediating role in the digital government communication ecosystem. Table 5 presents the mediation analysis results.

Table 5. Mediation Analysis: Role of Digital Trust

Mediated Path	Indirect Effect (β)	t-value	95% CI	Mediation Type
OCI → Digital Trust → SDQ	0.253	4.82***	[0.152, 0.352]	Partial
DDP → Digital Trust → SDQ	0.218	4.11***	[0.114, 0.321]	Partial
AIE → Digital Trust → SDQ	0.193	3.74***	[0.097, 0.289]	Partial
TOD → Digital Trust → SDQ	0.176	3.42**	[0.082, 0.269]	Partial

Note: *** $p < 0.001$; ** $p < 0.01$. SDQ = Service Delivery Quality. All four paths exhibit partial mediation (direct effects remain significant after including Digital Trust).

Qualitative Findings: Thematic Analysis

Reflexive thematic analysis of the 24 expert interviews generated five overarching themes, which both corroborated and elaborated the quantitative findings.

Theme 1 — Institutional Silos as the Primary Structural Barrier: Virtually all interviewees identified inter-agency fragmentation as the most significant impediment to omnichannel integration. One national ministry director described it as: 'Every department built its own digital island. Citizens end up navigating a dozen different portals, each with different interfaces, different login credentials, different response

times. The problem is not technology — we have the technology. The problem is governance architecture.' This qualitative insight contextualizes the quantitative finding that omnichannel integration, despite being the most impactful strategy, showed the largest implementation gap between national and sub-national agencies.

Theme 2 — Trust as Infrastructure: Senior officials consistently framed digital trust not as an outcome but as a precondition for digital service uptake. A provincial data chief noted: 'Citizens in rural areas who have experienced one data breach, one system crash where their submitted documents were lost, essentially become permanently offline in their behavior. Rebuilding that trust takes three to five years. The cost of one trust-damaging incident far exceeds the cost of preventing it.' This aligns with the quantitative finding that digital trust is the strongest mediator in the structural model.

Theme 3 — AI Governance Deficit: While AI-powered citizen engagement was broadly recognized as a high-potential strategy, officials expressed significant concern about the absence of governance frameworks for AI deployment in public services. Comments referenced a lack of explainability standards for automated decisions, inadequate processes for handling AI errors in public benefit allocation, and insufficient staff capacity to oversee AI systems. These concerns echo Busuioc (2022) on AI accountability in public administration.

Theme 4 — Literacy as the Invisible Barrier: Digital literacy gaps were identified as more pervasive and more difficult to address than technological infrastructure deficits. Interviewees noted that many citizens who technically have smartphone access remain functionally excluded from digital government services due to inadequate interface literacy, not lack of device access. This nuance — device access vs. functional digital competence — has significant implications for how digital inclusion investments should be targeted.

Theme 5 — Political Will and Leadership Continuity: A recurring concern across multiple governance levels was the vulnerability of digital communication initiatives to political cycles. Long-term digital transformation programs — typically requiring three to seven years for full implementation — frequently experience disruption during leadership transitions. Officials advocated for statutory protection of digital transformation plans and multi-year dedicated budget allocations to insulate programs from electoral volatility.

Proposed Framework: The DACE Model

Synthesizing quantitative findings and qualitative insights, this study proposes the DACE (Digital–Accessible–Collaborative–Evidence-based) Framework as an integrative guide for optimizing digital government communication for public service delivery enhancement. The four DACE dimensions are defined and operationalized as follows:

- D — Digital Integration:** Achieving true omnichannel coherence through a government-wide digital identity system, unified data exchange protocols (application programming interfaces), and a 'no wrong door' service architecture where any digital entry point connects to the full range of services. Digital integration requires both technical standardization and a governance mandate that overrides departmental autonomy.
- A — Accessibility and Inclusion:** Designing digital communication and service systems to accommodate the full spectrum of citizen capabilities and contexts: multilingual interfaces, voice-activated options for low-literacy users, offline-first design for low-connectivity environments, and mandatory minimum standards for digital accessibility (WCAG 2.2 or equivalent). Complementary analog service channels must be maintained and not allowed to atrophy as digital channels expand.
- C — Collaborative and Participatory:** Institutionalizing citizen participation in the design, testing, and evaluation of digital government communication systems. This includes co-design workshops with marginalized citizen groups, real-time citizen feedback loops embedded in digital service interfaces, open-source publication of government platform codebases, and civic technology partnerships that leverage civil society innovation.
- E — Evidence-Based Governance:** Establishing robust monitoring, evaluation, and learning (MEL) systems that generate real-time evidence on strategy effectiveness, channel utilization, citizen satisfaction, and trust levels. Government communication units must develop data analytics capacity and establish regular evidence-review cycles that feed directly into strategy adaptation. Open reporting of these performance metrics — including acknowledgment of failures — simultaneously generates accountability and reinforces transparency as a trust-building signal.

CONCLUSION

This study has investigated the landscape, determinants, and outcomes of digital government communication strategies for enhancing public service delivery through a comprehensive mixed-methods design encompassing a systematic literature review, a large-

scale quantitative survey (n = 1,030), and expert qualitative interviews (n = 24). The findings yield several important contributions.

Theoretically, the study extends the Technology Enactment Framework (Fountain, 2022), New Public Governance theory (Torfing et al., 2023), and the Citizen-Centric Digital Governance model (Lam et al., 2023) by empirically mapping how four distinct digital communication strategy clusters — omnichannel integration, data-driven personalization, AI-powered engagement, and transparency/open data governance — differentially impact service delivery quality and citizen satisfaction. The confirmation of digital trust as a significant partial mediator across all strategy-outcome relationships provides robust empirical grounding for the theoretical argument that trust is not merely a desirable by-product of good digital communication but a structural prerequisite for its effectiveness.

Empirically, the study provides fine-grained evidence on the pronounced urban-rural digital divide in digital government communication exposure, with rural citizens experiencing strategy exposure levels 1.06–1.26 Likert points below urban peers across all four strategy clusters. The structural model explains 51.3% of variance in service delivery quality ($R^2 = 0.513$), with omnichannel integration ($\beta = 0.521$) and digital trust ($\beta = 0.487$) emerging as the most impactful individual predictors.

Practically, the proposed DACE (Digital–Accessible–Collaborative–Evidence-based) Framework provides governments, digital governance practitioners, and public administration reformers with an actionable, principle-based guide to optimizing digital communication strategies. The framework's four dimensions — Digital Integration, Accessibility and Inclusion, Collaborative Participation, and Evidence-Based Governance — address the most critical gaps identified across both the quantitative and qualitative strands of this study.

The study acknowledges several limitations. First, the cross-sectional survey design precludes causal inference; longitudinal panel studies are needed to track the temporal dynamics of trust-building and strategy effectiveness. Second, the geographic scope, while purposively diverse, does not encompass international comparative samples, limiting the generalizability of quantitative findings across different institutional systems. Third, the qualitative sample, though purposively selected for diversity, remains subject to the inherent limitations of elite interviewing in capturing ground-level implementation realities. Future research should employ experimental or quasi-experimental designs to test causal mechanisms, incorporate computational analysis of government social media data for real-time strategy

monitoring, and extend the DACE framework through longitudinal case studies in contrasting governance environments.

In conclusion, digital government communication represents one of the most consequential domains of contemporary public administration reform. The evidence presented in this study makes clear that technological sophistication, while necessary, is insufficient: effective digital government communication demands an equally sophisticated commitment to institutional coordination, inclusive design, participatory governance, and evidence-based adaptive management. Governments that build these capacities systematically and invest in the digital trust ecosystem will be best positioned to realize the transformative potential of digital communication for public service delivery in the decades ahead.

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