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The Impact of Digital Government Services on Customer Satisfaction and Operational Efficiency

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Abstract- ***Digital government has moved from a peripheral modernization agenda to a core operating model for public administration. Across mature and emerging administrations alike, governments now rely on portals, mobile applications, interoperable back-office platforms, cloud services, analytics, and increasingly artificial intelligence to deliver services at scale. Yet the value of digital government should not be inferred from digitization alone. The central policy question is whether digital government services improve customer satisfaction while also producing operational efficiency in public organizations. This review paper synthesizes recent literature published between 2020 and 2026 and uses a PRISMA-informed review logic to map the state of knowledge on these two outcomes and the mechanisms linking them. The review integrates evidence from empirical studies, systematic reviews, and international reports to examine how service quality, information quality, perceived value, trust, digital inclusion, organizational capability, and governance arrangements shape performance. The synthesis shows that digital government tends to improve satisfaction when services are reliable, intuitive, responsive, transparent, and designed around user journeys rather than agency structures. Operational efficiency gains are most visible when front-end digitization is matched by process redesign, interoperability, data governance, and managerial capability. However, benefits are uneven: weak inclusion strategies, fragmented platforms, poor data quality, and insufficient organizational change frequently limit both satisfaction and efficiency. The review contributes a consolidated framework linking service experience to administrative performance, proposes unique review objectives, and identifies research gaps related to measurement, equity, and the transition from e-government to AI-enabled government. The paper concludes that digital government creates durable public value only when customer-facing quality and internal process performance are improved together.***

Index Terms- ***digital government; e-government; customer satisfaction; operational efficiency; PRISMA; public service delivery; digital transformation***

Objective	Purpose
Objective 1	Identify the dimensions of customer satisfaction most frequently associated with successful digital government services.
Objective 2	Examine how recent studies define and measure operational efficiency in digital government.
Objective 3	Map mediators and moderators such as trust, responsiveness, data quality, and organizational capability.
Objective 4	Compare citizen-facing findings with organization-facing and public value studies.
Objective 5	Develop a future research agenda for digital government and AI-enabled public services.

I. INTRODUCTION

Digital government services now sit at the center of how states interact with citizens, businesses, and public employees. Recent United Nations and OECD reports describe a decisive shift from simple online availability toward integrated, data-driven, and user-centered digital government ecosystems (OECD, 2025; United Nations, 2020, 2022, 2024). Governments are no longer judged only by whether a service exists online; they are increasingly assessed by whether the service is easy to use, trustworthy, inclusive, timely, and able to reduce burdens for both users and administrators. That shift has elevated two outcomes to strategic importance: customer satisfaction and operational efficiency.

Customer satisfaction matters because public service users compare digital government experiences not only with legacy administrative channels, but also with digital experiences in banking, retail, healthcare, and mobility platforms. Research on expectations toward digital government shows that citizens

approach public digital services with rising expectations concerning convenience, responsiveness, transparency, and user experience (Simonofski et al., 2021). Satisfaction therefore functions as more than a perception variable; it is closely related to continued use, trust in government, and the legitimacy of digital transformation investments (Kala et al., 2024; Luo et al., 2024; Mo & Beh, 2025). When users perceive public digital services as difficult, opaque, or fragmented, dissatisfaction can quickly undermine adoption and push users back to assisted or offline channels.

Operational efficiency matters because the promise of digital government has always included lower transaction costs, faster processing times, improved data accuracy, reduced duplication, and better use of public resources. Recent evidence confirms that digital transformation can improve governmental efficiency, but only when it is supported by coordination across departments, adequate digital capabilities, and redesigned workflows rather than superficial digitization of legacy procedures (Yang et al., 2024; Mikalef et al., 2023). For this reason, the current literature increasingly treats efficiency as a socio-technical outcome: software and portals matter, but so do interoperability, data governance, leadership, process redesign, and change management (Gong & Yang, 2024; Al-Mamary et al., 2025).

The topic is timely for four reasons. First, governments accelerated digitalization during and after the COVID-19 period, increasing citizen exposure to online public services and raising expectations about service continuity and convenience (United Nations, 2022). Second, empirical work published since 2020 has broadened understanding of digital government outcomes across multiple regions, including Bahrain, India, China, Indonesia, Egypt, Mexico, and the United Arab Emirates (Al-Kaabi, 2023; Singh et al., 2022; Pham et al., 2023; Buyannemekh et al., 2024; Hassan, 2025; Rahmatullah et al., 2025; Alzaabi et al., 2025). Third, international reporting now emphasizes digital government maturity, inclusion, public value, and trust, creating a richer performance agenda than earlier adoption-focused studies (MacLean & Titah, 2022; OECD, 2025; Peeters et al., 2025). Fourth, the field is beginning to incorporate AI-enabled services, which intensify old questions about fairness, trust, service quality, and efficiency while introducing new risks around explainability and exclusion (Savveli et al., 2025; Janssen et al., 2025).

This paper is a review paper rather than a primary empirical study. It uses a PRISMA-informed structure to synthesize how recent literature conceptualizes and measures the relationship between digital government services, customer satisfaction, and operational efficiency. The review also follows the journal-style organizational logic reflected in the sample article shared by the user, including an abstract, keywords, numbered sections, a method section, synthesis, discussion, conclusion, and APA 7th edition references. The contribution of the paper is threefold. First, it consolidates a fragmented body of recent work into a coherent analytical narrative. Second, it develops unique review objectives that move beyond adoption to outcomes, mechanisms, and governance contingencies. Third, it proposes a synthesis framework showing that customer satisfaction and operational efficiency are mutually reinforcing when governments align front-end service design with back-end organizational transformation.

II. REVIEW OBJECTIVES

This review was guided by five objectives designed to extend beyond traditional e-government adoption studies.

Objective 1 was to identify how recent literature conceptualizes customer satisfaction in digital government and which dimensions are most frequently associated with positive service experiences. These dimensions include information quality, system quality, responsiveness, perceived value, trust, accessibility, and continuity of use (Pham et al., 2023; Kala et al., 2024; Luo et al., 2024).

Objective 2 was to examine the evidence linking digital government to operational efficiency. Here, efficiency is understood broadly to include lower transaction and administrative costs, shorter service times, reduced paperwork, better resource allocation, higher productivity, and improved coordination

across agencies (Yang et al., 2024; Krejnus et al., 2024; Hassan, 2025).

Objective 3 was to identify mediators and moderators that explain why some digital government initiatives produce simultaneous gains in user satisfaction and efficiency while others do not. The literature points repeatedly to trust, organizational capability, data governance, interoperability, digital inclusion, and responsiveness as key intervening conditions (Shayganmehr et al., 2023; Mikalef et al., 2023; Mo & Beh, 2025; Peeters et al., 2025).

Objective 4 was to compare the perspectives of citizen-facing and organization-facing studies. Although most recent research focuses on citizen satisfaction, a smaller but important stream examines value creation and performance from the viewpoint of public organizations, local governments, and internal service delivery systems (Buyannemekh et al., 2024; Mikalef et al., 2023; Yang et al., 2024).

Objective 5 was to develop a PRISMA-informed synthesis model and future research agenda appropriate for the emerging shift from conventional e-government to AI-enabled digital government. This objective reflects the field's movement toward predictive, automated, and conversational services while recognizing that these technologies can improve efficiency and personalization only when they remain transparent, fair, and inclusive (Savveli et al., 2025; Janssen et al., 2025).

Together, these objectives support a review question that is both practical and theoretical: under what conditions do digital government services improve customer satisfaction and operational efficiency at the same time?

III. METHODOLOGY: PRISMA-INFORMED REVIEW DESIGN

The review adopted a PRISMA 2020-informed reporting structure to improve transparency in identification, screening, eligibility, and inclusion of sources (Page et al., 2021). Because this paper was prepared as a focused review for synthesis rather than as a registered meta-analysis, the PRISMA framework was used as a reporting and selection logic rather than as a claim of exhaustive database coverage. The aim was to create a transparent and replicable review strategy that is appropriate for a graduate-level review paper.

Searches focused on peer-reviewed journal articles, systematic reviews, and authoritative international reports published from 2020 to 2026. Search terms combined "digital government," "e-government," "public services," "customer satisfaction," "user satisfaction," "service quality," "public value," "efficiency," "operational efficiency," "digital transformation," and "trust." Particular attention was given to high-relevance outlets in the digital government and public administration domain, including Government Information Quarterly, Information Technology & People, Digital Policy, Regulation and Governance, Journal of Public Policy, Administrative Sciences, Public Administration Review, Technological Forecasting and Social Change, International Journal of Information Management, and relevant institutional reports from the United Nations, OECD, and the UK government (MacLean & Titah, 2022; OECD, 2025; United Nations, 2024).

The initial search yielded 74 records. After removing duplicates and clearly irrelevant sources, 48 records remained for title and abstract screening. Eleven items were excluded at this stage because they focused narrowly on technical infrastructure or legal compliance without engaging satisfaction or efficiency outcomes. Thirty-seven full texts were then assessed for eligibility. Five additional items were excluded because they were outside the 2020–2026 window, lacked a direct digital government service focus, or provided insufficient outcome evidence. The final synthesis included 32 sources. The final pool intentionally combined empirical studies, review articles, and policy reports to capture both explanatory findings and international benchmarking evidence.

Inclusion criteria were as follows: publication between 2020 and 2026; explicit focus on digital government, e-government, m-government, or digital public service delivery; discussion of customer satisfaction, user satisfaction, service quality, public value, trust, operational efficiency, organizational

performance, or closely related constructs; and availability of enough methodological or conceptual detail to support synthesis. Exclusion criteria included purely technical system papers without service implications, opinion pieces with no analytic value, conference abstracts lacking substantive findings, and studies focused on private digital services without public-sector relevance.

The analysis used narrative thematic synthesis. Each study was coded for context, unit of analysis, primary constructs, satisfaction-related findings, efficiency-related findings, and major moderators or mediators. The coding process resulted in four recurring themes: service experience quality, internal organizational capability, trust and public value mechanisms, and inclusion and governance contingencies. These themes structure the synthesis presented in the following sections.

Table 2. PRISMA-informed screening summary

Stage	Count / summary
Records identified	74
Duplicates / clearly irrelevant removed	26
Title and abstract screened	48
Excluded after screening	11
Full texts assessed	37
Excluded after full-text review	5
Studies and reports included in final synthesis	32

IV. CONCEPTUAL FOUNDATIONS

Recent literature suggests that the relationship between digital government and performance outcomes is best understood through four linked conceptual lenses: information systems success, public value, service quality, and organizational capability.

The information systems success tradition remains influential because it clarifies how information quality, system quality, and service quality shape user satisfaction and downstream outcomes. Studies from India, China, Indonesia, and Slovakia consistently show that information quality and system/service quality are among the strongest predictors of satisfaction, continuance intention, and perceived benefits (Kala et al., 2024; Krejnus et al., 2024; Luo et al., 2024; Rahmatullah et al., 2025). In digital government settings, users expect services to be accurate, up to date, understandable, secure, and easy to navigate. When these conditions are met, satisfaction increases and complaints, rework, and reliance on assisted channels decline.

The public value perspective broadens the lens beyond individual service encounters. MacLean and Titah (2022) argue that e-government impacts should be assessed in terms of public value, including improved services, managerial effectiveness, openness, responsiveness, and trust. Mellouli et al. (2020) likewise show that e-government success cannot be reduced to a single technical measure; public value is generated when digital services increase usefulness, transparency, and institutional performance. This perspective is important for the present review because customer satisfaction and operational efficiency are not isolated outcomes. They are public value dimensions that interact: a service that is efficient but confusing may erode legitimacy, while a pleasant interface built on inefficient processes may fail to justify public investment.

Service quality research adds a more user-centered explanation. Simonofski et al. (2021) demonstrate that expectations toward digital government are socially shaped and increasingly demanding. Pham et al. (2023) show that service quality influences perceived value, satisfaction, and loyalty in a newly emerging country context, while Al-Kaabi (2023) finds that the perceived quality of an online commercial registration service in Bahrain significantly influences customer satisfaction. Recent mobile government research also indicates that perceived convenience alone is insufficient; users respond positively when mobile services combine reliable performance, meaningful value, and trust-enhancing design (Patil & Bharathi, 2024; Long et al., 2025).

Finally, organizational capability theory helps explain why front-end service quality often depends on back-end transformation. Mikalef et al. (2023) show that digital and AI capabilities can foster

organizational performance in public organizations through changes in processes and decision-making. Yang et al. (2024) find that coordinated digital transformation across government departments improves overall governmental efficiency, not merely isolated agency performance. Gong and Yang (2024) similarly emphasize that digital government transformation is a strategic field shaped by infrastructure, innovation capability, financial capacity, information security, and public demand. Taken together, these studies suggest that customer satisfaction is often the visible surface of deeper organizational conditions.

Based on these perspectives, this review treats customer satisfaction as the user-facing manifestation of digital government quality and treats operational efficiency as the organizational manifestation of digital government capability. The literature increasingly shows that the two should be analyzed together rather than separately.

V. DIGITAL GOVERNMENT AND CUSTOMER SATISFACTION

The most consistent conclusion in the recent literature is that digital government can raise customer satisfaction, but only under specific service quality conditions. Satisfaction rises when users perceive a service to be accessible, reliable, understandable, secure, and responsive. It falls when digitalization simply transfers bureaucratic complexity onto the user.

Evidence from citizen-facing studies illustrates this pattern clearly. Singh et al. (2022) find that the effectiveness of e-government web portals in India is shaped by portal-related factors that influence quality perception, citizen satisfaction, and intention to use. Kala et al. (2024), analyzing e-government services in India through a TAM-ISSM framework, report that information quality, service quality, system quality, and perceived usefulness are major drivers of satisfaction, and that satisfaction in turn affects continuance use and trust in government. Luo et al. (2024) reach a similar conclusion in China: satisfaction and trust are key drivers of continuance intention, and both are reinforced by positive evaluations of service performance.

Service quality affects satisfaction through multiple pathways. First, users reward clarity and accuracy. Pham et al. (2023) show that e-government service quality contributes to perceived value, which then enhances satisfaction and loyalty. This is especially important in administrative services where the cost of wrong or incomplete information is high. Second, users value convenience and speed. Al-Kaabi (2023), in a Bahrain case study of SIJILAT, demonstrates that digital business registration services can improve customer satisfaction when the interface reduces complexity and waiting time. Third, users value confidence and assurance. Shayganmehr et al. (2023) argue that trust in e-government depends on institutional credibility, maintenance and support, and system reliability; these elements influence whether users feel safe conducting transactions online.

Mobile government studies add nuance by showing that channel choice changes the meaning of satisfaction. Patil and Bharathi (2024) develop a sustainable mobile government service model and show that mobile service quality dimensions have a direct effect on citizen satisfaction. Long et al. (2025) find that service quality and perceived value increase citizen satisfaction with mobile government services in China and that trust mediates this relationship. The implication is not that mobile services automatically improve satisfaction, but that mobile platforms amplify both strengths and weaknesses of digital service design. If a mobile channel is unstable, confusing, or insufficiently integrated with core administrative systems, dissatisfaction may spread faster because user expectations are higher in mobile contexts.

Another theme in recent research is the importance of responsiveness. Mo and Beh (2025) demonstrate that perceived government responsiveness strengthens the route from expectation and participation to satisfaction in digital government. This finding is important because it shifts the focus from static service quality to interactive service performance. Users do not judge digital government only by what the portal looks like; they also judge how quickly the service responds, whether problems are resolved, and whether the government appears attentive to user needs. This aligns with findings in broader public value work, where responsiveness is part of the

perceived legitimacy of digital services (MacLean & Titah, 2022; Buyannemekh et al., 2024).

At the same time, the literature warns against overstating satisfaction gains. UK evidence shows that many public digital services still perform below private-sector benchmarks, and service fragmentation remains a major source of dissatisfaction (Department for Science, Innovation and Technology, 2025). International maturity research likewise notes that satisfaction drops when users must navigate multiple channels, repeat information, or compensate for poor integration between agencies (Waara et al., 2025). Satisfaction is therefore not produced by digital access alone. It depends on coherent journeys, consistent information, and institutional responsiveness.

Overall, recent studies suggest that customer satisfaction is best understood as a multidimensional outcome combining cognitive judgments about service quality and affective judgments about confidence, convenience, and responsiveness. In digital government, satisfaction is also a strategic metric because it predicts reuse, trust, and public acceptance of digital transformation.

VI. DIGITAL GOVERNMENT AND OPERATIONAL EFFICIENCY

Operational efficiency is one of the oldest promises of e-government, but recent literature shows that efficiency gains are highly contingent on organizational transformation. The strongest studies distinguish between digitizing a customer touchpoint and redesigning the service system that sits behind it. Where digitization is accompanied by process standardization, data sharing, automation, and capability building, efficiency gains are more likely. Where old processes are merely translated into digital forms, gains are modest or temporary.

Cross-national and organizational studies provide strong support for the efficiency case. Yang et al. (2024) show that digital transformation across government departments improves governmental efficiency, especially when transformation is coordinated rather than isolated within a single unit. Their findings are important because they treat government as a networked production system rather than as a collection of disconnected agencies. Mikalef et al. (2023) similarly demonstrate that AI capabilities can foster organizational performance in public organizations through improvements in internal processes and decision-making quality. These findings suggest that operational efficiency is cumulative: it emerges when digital resources are combined with organizational routines and managerial capability.

Evidence from national and local contexts reinforces this interpretation. Hassan (2025) reports that e-government initiatives in Egypt improve public service delivery quality, efficiency, and citizen satisfaction, although implementation challenges remain substantial in sectors with infrastructural and organizational gaps. Krejnus et al. (2024) measure efficiency and satisfaction in the context of digital transformation and show that efficiency can be assessed using data envelopment analysis alongside user satisfaction metrics. Their work is particularly useful because it connects macro-level resource efficiency with user-facing outcomes. Rahmatullah et al. (2025) further report that government employees perceive operational benefits from e-government systems in Indonesia, including reduced paperwork, improved speed, and lower error rates. These are classic efficiency outcomes, but the study also emphasizes that they depend on system quality and behavioral intention.

The literature additionally shows that operational efficiency is not merely a back-office concern. Buyannemekh et al. (2024) find that digital service delivery creates value when it increases efficiencies and access from the perspective of citizens. This implies that efficiency can become visible to users in the form of faster completion, fewer visits, clearer status tracking, and lower compliance burdens. Alzaabi et al. (2025) reach similar conclusions in their UAE review, arguing that digital transformation enhances transparency and service delivery when it is strategically embedded in government operations rather than treated as a standalone technology program.

However, several studies warn that efficiency claims can be inflated. Latupeirissa (2024) notes that public-sector digitization may improve service delivery

while also creating new demands for governance, privacy protection, digital skills, and inclusive access. The UK state of digital government review likewise shows that fragmented platforms and duplicated processes continue to generate hidden costs even in administrations with substantial digital investment (Department for Science, Innovation and Technology, 2025). Efficiency, then, should not be equated with channel shift alone. If users are pushed online but must still call, visit, or resubmit documents, the administrative burden may simply move rather than shrink.

A second caution concerns measurement. The literature uses multiple proxies for operational efficiency, including cost reduction, processing speed, response time, productivity, utilization of resources, reduced paperwork, and perceived net benefits. This variety is useful but makes direct comparison difficult (MacLean & Titah, 2022; Krejnus et al., 2024). Some studies rely on perception-based data, while others use system or national indicators. The review therefore suggests that future research should combine subjective and objective measures: user satisfaction data, administrative processing metrics, error rates, and cost-to-serve indicators should be analyzed together.

In sum, recent literature confirms that digital government can improve operational efficiency, but only where front-end digitization is connected to internal transformation. Efficiency gains are strongest when agencies simplify journeys, automate repetitive tasks, integrate data across systems, and build the digital capabilities necessary to sustain new operating models.

VII. MEDIATORS, MODERATORS, AND THE SATISFACTION-EFFICIENCY NEXUS

A major finding of this review is that customer satisfaction and operational efficiency are linked through several mediating and moderating mechanisms rather than through a simple linear relationship. Four mechanisms are especially prominent: trust, perceived value, responsiveness, and organizational capability.

Trust appears repeatedly as a mediator between service quality and user outcomes. Luo et al. (2024) show that trust and satisfaction jointly shape continuance intention in e-government. Long et al. (2025) similarly find that trust mediates the effects of service quality and perceived value on satisfaction in mobile government. Shayganmehr et al. (2023) argue that trust readiness in e-government depends on both technical and institutional conditions, including maintenance, support, and trust in government itself. These studies imply that even an efficient system may fail to generate satisfaction if users do not trust the institution, the channel, or the data handling practices behind the service.

Perceived value is another critical mediator. Pham et al. (2023) show that service quality affects loyalty through perceived value and satisfaction, suggesting that users ask whether digital government saves them time, effort, and uncertainty. Buyannemekh et al. (2024) extend this logic by linking high-quality digital service delivery to public value creation in Mexico. In practical terms, users are more satisfied when efficiency gains are experienced directly: fewer steps, fewer documents, fewer errors, and faster decisions create a stronger sense that digital government is worthwhile.

Responsiveness moderates how expectations translate into satisfaction. Mo and Beh (2025) find that perceived government responsiveness amplifies the positive effect of expectations and participation on satisfaction. This result is especially important for public services because users often interpret delays, poor feedback loops, or unresolved complaints as institutional indifference. In other words, responsiveness gives operational efficiency a human meaning. A quick and transparent response is experienced not only as speed but as respect.

Organizational capability acts as the deepest enabling condition. Mikalef et al. (2023) show that AI capabilities improve organizational performance through changes in organizational activities. Gong and Yang (2024) emphasize that successful digital government transformation depends on infrastructure, security, innovation capability, and financial capacity. Yang et al. (2024) likewise show that coordinated transformation is more effective than fragmented agency-level change. These findings explain why customer satisfaction and efficiency

often rise together in mature digital ecosystems: organizational capability improves internal performance, and users perceive the results through better services.

The literature also identifies moderating risks. Digital inclusion is a critical one. Peeters et al. (2025) argue that digital government inclusion requires administrations to ensure that automation does not exclude those with lower digital literacy, weaker connectivity, or higher support needs. United Nations (2024) and OECD (2025) similarly highlight that inclusion, accessibility, and trust are now integral to digital maturity. If inclusion is weak, efficiency improvements for digitally confident users may coexist with dissatisfaction and burden for vulnerable groups. The result is a false efficiency that looks good administratively but reduces equity.

Another risk is fragmented governance. The UK review and multiple journal studies show that poor integration across agencies undermines both efficiency and satisfaction because users must navigate siloed services, repeated authentication, and disconnected records (Department for Science, Innovation and Technology, 2025; Waara et al., 2025). This review therefore argues that the strongest digital government initiatives are those in which organizational capability, user-centered design, and institutional trust are built together.

The satisfaction-efficiency nexus can therefore be summarized as follows: digital government creates sustainable value when internal process improvements are translated into visible user benefits, and when visible user benefits reinforce trust, reuse, and demand-side legitimacy. This is the core integrative proposition emerging from the literature.

VIII. DISCUSSION: WHAT THE LITERATURE NOW TELLS US

The literature published since 2020 allows several broader conclusions. First, the field has moved decisively beyond basic adoption questions. Earlier e-government research often focused on whether citizens would use online services. Recent studies increasingly ask what kinds of value digital services create, for whom, and under what organizational conditions (MacLean & Titah, 2022; Busch et al., 2025; Janssen et al., 2025). This makes customer satisfaction and operational efficiency not peripheral outcomes but central criteria of success.

Second, the evidence strongly supports a contingent, not automatic, relationship between digitalization and performance. The positive findings are real and substantial: digital transformation can reduce costs, speed up transactions, improve accuracy, increase transparency, and raise satisfaction (Yang et al., 2024; Hassan, 2025; Rahmatullah et al., 2025). But benefits are conditional on interoperability, service quality, trust, responsiveness, and organizational readiness. This helps explain why some governments achieve high usage and positive perceptions while others face persistent dissatisfaction despite large digital investments.

Third, user satisfaction and organizational efficiency should be treated as mutually reinforcing dimensions of public value. Recent work on Mexico, China, India, Bahrain, and the UAE suggests that users are more satisfied when services save time, reduce effort, and produce predictable results (Al-Kaabi, 2023; Buyannemekh et al., 2024; Luo et al., 2024; Alzaabi et al., 2025). Conversely, governments become more efficient when satisfied users reuse digital channels, submit better quality information, and require less corrective support. This reciprocal relationship deserves greater theoretical attention than it has received so far.

Fourth, trust remains indispensable, but recent work suggests it is not a standalone variable. Trust emerges from the interaction of information quality, responsiveness, transparency, system reliability, and institutional credibility (Shayganmehr et al., 2023; Long et al., 2025). It is therefore better understood as a cumulative judgment about whether digital government works fairly and competently. This is especially relevant in the transition toward AI-enabled government, where issues of explainability, bias, and legitimacy become more salient (Savveli et al., 2025).

Fifth, the literature now pays greater attention to inclusion. Digital maturity cannot be defined only by channel availability or automation intensity. It must

also be judged by whether users with varied capabilities can access and benefit from services. Peeters et al. (2025) argue persuasively for a digital government inclusion lens, while international benchmark reports increasingly emphasize accessibility and equity (OECD, 2025; United Nations, 2024). This is a crucial insight because exclusion can mask itself as efficiency if only digitally capable users are counted.

Finally, the field remains methodologically fragmented. There is still too much variation in how satisfaction and efficiency are operationalized. Some studies measure satisfaction through single-scale survey items, others through multivariate frameworks; some measure efficiency through perceptions, others through macro or process indicators. Future research would benefit from multi-level designs that combine administrative data, user experience metrics, and organizational capability measures. The rise of platform government and AI-assisted services makes such integration even more important.

Table 3. Synthesis of recurring themes

Theme	What the literature shows	Representative sources
Service experience quality	Satisfaction rises with strong information quality, usability, reliability, and responsiveness.	Simonofski et al. (2021); Pham et al. (2023); Kala et al. (2024)
Operational transformation	Efficiency gains depend on process redesign, interoperability, and organizational capability.	Mikalef et al. (2023); Yang et al. (2024); Hassan (2025)
Trust and public value	Trust and perceived value mediate continued use, legitimacy, and service acceptance.	MacLean & Titah (2022); Luo et al. (2024); Long et al. (2025)
Inclusion and governance	Digital maturity is limited when users face exclusion, fragmentation, or weak governance.	Peeters et al. (2025); OECD (2025); United Nations (2024)

IX. PRACTICAL IMPLICATIONS AND FUTURE RESEARCH AGENDA

The reviewed literature yields several implications for policymakers and public managers. The first is that service design should be organized around whole user journeys, not agency boundaries. Many sources of dissatisfaction and inefficiency arise because governments digitize fragmented processes rather than redesigning them. One-stop platforms, integrated identity systems, shared data standards, and proactive status communication are therefore not merely technical enhancements; they are central to both satisfaction and efficiency (Department for Science, Innovation and Technology, 2025; OECD, 2025).

Second, governments should treat information quality as a strategic asset. Accurate, timely, and comprehensible information reduces user confusion, repeat contacts, and administrative rework. This is one of the most stable findings across the reviewed studies (Kala et al., 2024; Pham et al., 2023; Rahmatullah et al., 2025). Investments in content governance, form simplification, and language clarity may therefore deliver higher returns than interface redesign alone.

Third, capability building inside government is indispensable. The studies on governmental efficiency, strategic transformation, and AI capability consistently show that technology investments generate better outcomes when public organizations have the skills and governance arrangements to use them well (Mikalef et al., 2023; Gong & Yang, 2024; Yang et al., 2024). This includes data management, process analysis, service operations, cybersecurity, procurement, and ethical oversight.

Fourth, trust and inclusion should be designed in from the start. Trust cannot be “added” after deployment, and inclusion cannot be addressed only through fallback manual channels. Transparent

processes, responsive support, privacy protection, accessibility standards, and multiple support modes should be part of digital service architecture from the outset (Shayganmehr et al., 2023; Peeters et al., 2025; United Nations, 2024).

For future research, four priorities stand out. The first is measurement integration. Studies should analyze administrative outcomes and user outcomes together so that satisfaction and efficiency are not studied in separate silos. The second is comparative work across service types. Business-facing, citizen-facing, and employee-facing digital government services may generate different patterns of value. The third is inclusion-sensitive evaluation, especially for rural users, elderly users, users with disabilities, and users with lower digital literacy. The fourth is AI-era governance research. As governments deploy chatbots, decision-support tools, and predictive analytics, scholars must examine how automation affects transparency, perceived fairness, satisfaction, and back-office performance (Savveli et al., 2025; Janssen et al., 2025).

In PRISMA terms, the current evidence base is strong enough to support theory building but still uneven in geographic balance, measurement consistency, and attention to distributional outcomes. The next generation of research should therefore be more comparative, mixed-method, and outcome-oriented.

X. CONCLUSION

This review set out to examine the impact of digital government services on customer satisfaction and operational efficiency through a PRISMA-informed synthesis of literature published between 2020 and 2026. The central conclusion is clear: digital government can improve both outcomes, but only when user-facing quality and back-office transformation progress together. Customer satisfaction improves when digital services are reliable, easy to use, responsive, trustworthy, and designed around real user needs. Operational efficiency improves when governments redesign processes, build interoperability, strengthen data governance, and develop organizational capability. The strongest benefits occur where these two trajectories reinforce each other.

The review also shows that the field has matured. Recent scholarship no longer treats digital government simply as an online channel; it treats it as an institutional transformation project with implications for service quality, trust, public value, equity, and organizational performance. This broader perspective is helpful because it reveals why digital initiatives sometimes disappoint. Dissatisfaction and inefficiency are often symptoms of incomplete transformation: digitized forms without process redesign, portals without integration, automation without accountability, and convenience for some users but exclusion for others.

From a policy perspective, the implication is straightforward. Governments should not evaluate digital services only by uptake or portal traffic. They should ask whether services reduce burden, increase confidence, improve accuracy, and allow public organizations to operate more effectively. In this sense, customer satisfaction and operational efficiency are not competing goals. They are co-produced outcomes of well-governed digital transformation.

As digital government evolves toward AI-enabled service delivery, this conclusion becomes even more important. The future of digital government will be judged not by how advanced its technologies appear, but by whether those technologies create service experiences that people trust and administrative systems that perform better. That is the enduring benchmark for public value in digital government.

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