LEX LOCALIS-JOURNAL OF LOCAL SELF-GOVERNMENT
ISSN:1581-5374 E-ISSN:1855-363X
VOL. 23, NO. 10(2025)

DIGITAL LEADERSHIP AND E-GOVERNMENT SERVICE QUALITY: A SYSTEMATIC REVIEW OF CONCEPTS, MODELS, AND PUBLIC SECTOR IMPLICATIONS

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Abstract
The rapid digital transformation in both public and private sectors has heightened the importance of digital leadership and e-government service quality as critical drivers of institutional performance, innovation, and citizen satisfaction. This systematic review synthesizes findings from ten peer-reviewed studies published between 1995 and 2022, focusing on the conceptualization of digital leadership, its impact on organizational outcomes, and the evaluation of e-government service quality across various contexts. The selected literature covers diverse geographical regions, sectors, and methodological approaches, ranging from theoretical frameworks and mixed-methods models to empirical assessments using large-scale datasets. Key themes emerging from the review include: (1) the multidimensional nature of digital leadership, encompassing organizational, individual, and leader-specific factors; (2) the mediating role of digital platforms in fostering innovation; (3) the link between digital leadership and psychological well-being; and (4) the critical role of service quality dimensions—such as usability, reliability, transparency, and security—in enhancing citizen trust in e-government. While the reviewed studies offer valuable theoretical and empirical insights, limitations include a predominance of commercial-sector focus, limited longitudinal research, and insufficient exploration of public sector dynamics in non-Western contexts. This review highlights the need for future research to integrate digital leadership and e-government quality models in government settings, with a particular emphasis on cultural adaptation, user-centered design, and the measurement of long-term outcomes.

Keywords: Digital leadership, e-government, service quality, citizen trust, innovation, organizational performance, psychological well-being, public sector, digital platforms, user-centered design

1. Introduction

Digital transformation has become a defining characteristic of modern governance and organizational management, reshaping the way institutions operate, engage with stakeholders, and deliver services (Eberl & Drews, 2021; Benitez et al., 2022). The rapid integration of advanced digital technologies—ranging from artificial intelligence and big data analytics to blockchain and cloud computing—has disrupted traditional models of administration and service provision in both public and private sectors (Sá et al., 2016). Within this evolving landscape, **digital leadership** has emerged as a strategic capability that enables leaders to navigate complexity, manage technological change, and cultivate an organizational culture conducive to innovation (Zeike et al., 2019). Closely linked to this is **e-government service quality**, which determines how effectively governments meet citizen needs through digital channels and directly influences public trust, satisfaction, and participation (Papadomichelaki & Mentzas, 2012; Bhattacharya et al., 2012).

The last two decades have witnessed a surge in scholarly interest in both domains, reflecting a growing recognition that leadership in the digital era requires more than technical proficiency. Digital leaders must possess vision, adaptability, and the ability to align technology adoption with strategic objectives, while simultaneously fostering collaboration and knowledge sharing across organizational boundaries (Benitez et al., 2022; Donnelly et al., 1995). At the same time, governments are under increasing pressure to deliver reliable,

transparent, and accessible digital services, making the evaluation of service quality a key policy concern (Papadomichelaki & Mentzas, 2009).

Despite this expanding body of research, the literature remains fragmented. Existing studies vary considerably in their conceptualization of digital leadership—ranging from competency-based models to socio-technical frameworks—and in the dimensions used to evaluate e-government service quality, which may include usability, security, responsiveness, and transparency (Bhattacharya et al., 2012; Sá et al., 2016). Methodologically, approaches range from qualitative case studies and mixed-method models to large-scale quantitative surveys, with little consensus on standardized metrics (Eberl & Drews, 2021).

Furthermore, while digital leadership research often emphasizes private sector innovation, empirical evidence from the public sector—especially in developing economies—remains comparatively scarce (Zeike et al., 2019). This creates a critical knowledge gap in understanding how leadership competencies and service quality interact to enhance institutional performance, citizen engagement, and trust in government. Such a gap is particularly relevant given the unique challenges faced by public sector organizations, including bureaucratic inertia, budgetary constraints, and the need for equitable access to services (Sá et al., 2016).

In response to this gap, the present systematic review synthesizes and critically analyzes the existing literature on digital leadership and e-government service quality. By integrating theoretical perspectives with empirical findings, this review aims to provide a consolidated understanding of these interrelated domains. It identifies converging themes, highlights methodological strengths and weaknesses, and outlines future research directions, particularly in contexts where digital governance remains emergent. Ultimately, this work seeks to bridge theoretical development and practical application, offering insights that are relevant to both scholars and policymakers engaged in the digital transformation of government institutions.

1.2 Study Questions

1. How is digital leadership conceptualized across different organizational and governmental contexts, and what key dimensions define it?
2. What relationships exist between digital leadership and critical outcomes such as innovation, institutional performance, employee well-being, and citizen trust?
3. Which models and dimensions of e-government service quality are most applicable to public sector contexts, and how do they influence citizen satisfaction and engagement?
4. What gaps, methodological limitations, and contextual factors need to be addressed in future research to better integrate digital leadership and e-government service quality frameworks, particularly in non-Western and developing countries?

2. Objectives

This review aims to:

1. Consolidate existing definitions, frameworks, and empirical findings on digital leadership and e-government service quality.
2. Identify key factors influencing the effectiveness of digital leadership in fostering innovation, organizational performance, and employee well-being.
3. Analyze models and scales used to assess e-government service quality, with a focus on their applicability to public sector contexts.
4. Evaluate methodological strengths and weaknesses across the reviewed studies.
5. Highlight research gaps and propose directions for future studies, particularly in non-Western public sector environments.

3. Significance of the Study

This systematic review offers several contributions to the academic and policy discourse:

- **Theoretical Integration:** By examining both digital leadership and e-government service quality, this review bridges two closely related domains that are often studied in isolation.
- **Public Sector Relevance:** The synthesis underscores the importance of adapting leadership frameworks and service quality models to governmental contexts, where challenges differ from those in commercial sectors.
- **Methodological Insights:** The review assesses the strengths and limitations of various research designs, providing guidance for scholars seeking to develop robust, context-sensitive studies.
- **Policy Implications:** For policymakers, the findings offer evidence-based recommendations for cultivating digital leadership competencies and enhancing digital public service quality, ultimately contributing to greater citizen trust and institutional legitimacy.
- **Global Perspective:** By incorporating studies from Europe, Asia, and other regions, the review highlights both universal principles and context-specific considerations in digital transformation efforts.

4. Methodology

This systematic review employed a structured, multi-stage process to ensure **rigor, transparency, and replicability** in identifying, selecting, and synthesizing evidence on **digital leadership** and **e-government service quality**.

4.1 Search Strategy

The literature search was conducted in **Scopus**, **Web of Science**, and **Google Scholar**, covering the period **1995–2022** to capture both early e-government service-quality frameworks and recent digital leadership models. Search strings combined keywords with Boolean operators, for example:

- "digital leadership" OR "e-leadership" AND "public sector" OR "government"
- "e-government" OR "digital public services" AND "service quality" OR "citizen trust"
- "innovation" AND "digital transformation" AND "leadership"

This ensured inclusion of both **leadership-focused** and **service-quality-focused** studies relevant to public sector digital transformation.

4.2 Inclusion Criteria

Studies were included if they:

1. Examined **digital leadership**, **e-leadership**, or related leadership frameworks in the context of **digital transformation** (e.g., Eberl & Drews, 2021; Zeike et al., 2019).
2. Assessed **e-government** or **digital public service quality** using conceptual models, empirical analysis, or validated measurement scales (e.g., Papadomichelaki & Mentzas, 2012; Bhattacharya et al., 2012).
3. Were **peer-reviewed** journal articles published in **English**.

4.3 Exclusion Criteria

We excluded:

- Studies focusing solely on **technical IT development** without any leadership or service quality dimension (e.g., purely algorithmic or systems engineering papers).
- **Non-peer-reviewed** reports, conference abstracts, and book chapters.
- Studies in **non-governmental contexts** unless they offered transferable frameworks for public sector digital leadership or service quality.

4.4 Study Selection

The screening process followed **PRISMA** principles:

1. **Initial retrieval**: 327 records identified.
2. **Title and abstract screening**: 81 retained after relevance check.
3. **Full-text review**: 18 eligible.
4. **Final selection**: 10 studies meeting all inclusion criteria, representing a mix of research designs:

- **Systematic literature reviews** – Eberl & Drews (2021); Sá et al. (2016)
- **Mixed-methods research** – Benitez et al. (2022)
- **Quantitative surveys** – Zeike et al. (2019); Donnelly et al. (1995)
- **Model development/validation** – Papadomichelaki & Mentzas (2012, 2009); Bhattacharya et al. (2012)
- **Framework synthesis and evaluation** – Halaris et al. (2007); Tan et al. (2008)

4.5 Data Extraction

For each included study, the following were recorded in an extraction table:

- **Author(s) and year**
- **Research objectives**
- **Geographical/contextual setting** (e.g., municipal government, national portals, corporate leadership)
- **Methodology** (survey, case study, scale validation, review)
- **Key findings**
- **Strengths and limitations**

4.6 Analysis

A **thematic synthesis** was performed, following Thomas and Harden's (2008) three-stage method:

1. **Free coding** of findings from each study.
2. **Organizing codes** into descriptive themes.
3. **Generating analytical themes** that linked leadership constructs to service-quality models.

This process yielded **three overarching themes**:

1. **Conceptualization and scope of digital leadership** – including organizational, individual, and leader-specific capabilities.
2. **Relationships between digital leadership and organizational outcomes** – innovation, performance, well-being, and citizen trust.
3. **Models and dimensions of e-government service quality** – from e-GovQual to citizen-centric models, including back-office integration.

By grounding the synthesis in **peer-reviewed empirical and conceptual literature**, this approach provided a **comprehensive and critical** overview of the state of research, highlighted **methodological strengths and weaknesses**, and identified **knowledge gaps** relevant to both developed and developing country contexts.

2.2 Previous Studies

First Study

Digital Leadership – Mountain or Molehill? A Literature Review

(Eberl, J. & Drews, P., 2021)

This study, conducted by Julia K. Eberl and Paul Drews, explores the concept of digital leadership through a systematic literature review aimed at clarifying its dimensions, identifying influencing factors, and uncovering existing research gaps. As digital leadership is still a relatively new concept, it remains poorly defined despite the growing attention it

receives in practice. This ambiguity hinders the development of its theories and the framing of the concept as a well-established field of research.

By analyzing 96 academic studies, the authors propose a new definition that differentiates digital leadership from e-leadership. While e-leadership focuses on leveraging technology to enhance existing processes, digital leadership goes further by driving fundamental transformations in business models, organizational structures, and people management strategies to achieve full digital transformation within institutions.

The study identifies three main levels of influence on digital leadership:

1. **Organizational level** – factors include institutional vision, governance, organizational culture and values, decision-making structures, and decision-making styles.
2. **Individual level** – issues such as human resource management, knowledge sharing, virtual teamwork, collaboration, and communication.
3. **Leader-specific traits** – including leadership skills, leadership roles, and the leader's approach to managing digital transformation.

Despite the study's scholarly value in offering a comprehensive literature review and a coherent analytical framework for understanding digital leadership, it has some limitations. One of the main shortcomings is the lack of practical application. The study does not include case studies to demonstrate how digital leadership is implemented in real-world settings, making it heavily theoretical. Furthermore, its focus is primarily on the commercial sector, with insufficient attention given to the public sector or non-profit organizations, despite the growing importance of digital transformation in governments worldwide.

The study also remains mostly theoretical and lacks quantitative data to support its conclusions, highlighting the need for more empirical research. Additionally, the relationship between digital leadership and employee empowerment was not thoroughly examined; it does not sufficiently analyze how digital leadership influences employee motivation and productivity in digital work environments—an area this current study seeks to address.

In summary, this study provides a valuable foundation for understanding digital leadership but reveals the need for future research to explore its practical applications—particularly in government contexts—and to measure the real impact of digital leadership on the quality of public services. Within the scope of the current study on digital leadership in Qatar's public sector, this analytical framework can be adapted and expanded to include factors influencing the adoption of digital leadership in government institutions, such as digitalization challenges, employee readiness, and the role of digital governance in achieving national strategic goals.

Second Study

Impact of Digital Leadership Capability on Innovation Performance: The Role of Platform Digitization Capability

(Benitez, J. & Others, 2022)

Published in *Information & Management* in 2022, this study examines the impact of digital leadership on innovation performance in organizations. Researchers José Benitez and colleagues focus on the mediating role of platform digitization in this relationship. The study aims to build a theoretical and empirical model that demonstrates how digital leadership enhances innovation by developing integrated digital platforms.

The researchers adopted a mixed-methods approach, combining both qualitative and quantitative analyses to gain a comprehensive understanding of the relationship between digital leadership and innovation performance. The first phase involved a multiple-case study of ten European companies to construct a theoretical model. The second phase included a quantitative analysis of data from 117 European companies, enabling them to test the proposed model.

Findings revealed that digital leadership plays a critical role in fostering innovation, but its effect is indirect, operating through intermediary mechanisms. One of the key mediators identified was platform digitization, which emerged as a crucial factor in achieving innovation performance. Digital leaders with a clear strategic vision for adopting technology are better positioned to guide their organizations toward creating advanced digital platforms. These platforms, in turn, enhance internal processes and increase competitiveness by accelerating innovation.

The study further indicated that digital platforms provide a supportive environment for developing new products and services, help improve administrative and production processes, and strengthen organizational responsiveness to market changes.

Additionally, the study highlighted several internal and external variables influencing the relationship between digital leadership and innovation, such as company size, investment in information technology, and the nature of the industrial sector. The results showed that organizations that invest in digital leadership skills and integrate digital solutions into their operations achieve higher innovation performance than those lacking clear strategies in this area.

Among the study's strengths is its comprehensive methodology, combining qualitative and quantitative data, which enhances the credibility of the findings. The researchers also presented a coherent theoretical model that explains the relationship between digital leadership and innovation—an important contribution to the research literature. Moreover, the use of a large empirical dataset covering more than 100 European companies lends reliability to the study's conclusions.

However, there are limitations. The study's focus on commercial companies in Europe limits the generalizability of its findings to non-profit or government organizations. It also relied on cross-sectional data, meaning it could not track how the relationship between digital leadership and innovation evolves over time. Furthermore, it did not provide in-depth analysis of the cultural and organizational challenges that may hinder the adoption of digital leadership in various institutional contexts.

Third Study

Digital Leadership Skills and Associations with Psychological Well-Being (Zeike, S & Others, 2019)

This study examines the relationship between digital leadership skills and the psychological well-being of managers. It aims to understand how digital leadership can contribute to improving the mental health of managers amidst rapid digital transformations. The research is based on the hypothesis that possessing strong digital leadership skills can serve as a functional resource that helps managers cope with the challenges associated with digital transformation, thereby enhancing their psychological well-being.

The study employed a quantitative research methodology, collecting data from 368 managers at a major German company in the ICT sector. Regression analysis was used to examine the relationship between digital leadership skills and psychological well-being, utilizing the WHO-5 Well-Being Index as the primary measurement tool. The results revealed a statistically significant positive relationship between digital leadership skills and psychological well-being. Managers with higher digital leadership skills tended to enjoy better mental well-being. Additionally, the study found that demographic factors such as age, gender, and management experience had little impact on this relationship, indicating that the importance of digital leadership for well-being is not affected by individual differences.

The findings suggest that digital leadership skills can play a vital role in promoting managers' mental health, helping them navigate changing digital work environments and reducing stress associated with digital transformation. However, the researchers noted that the study relied on

cross-sectional data, making it difficult to determine a causal relationship between digital leadership and psychological well-being. Furthermore, the sample was limited to one company in a specific sector, which may restrict the generalizability of the findings to other industries or work environments.

A key strength of this study is that it offers a new perspective linking digital leadership with mental health—an area that has received limited attention in previous research. Its use of a specifically developed scale to assess digital leadership skills also enhances the credibility of its findings. Nevertheless, further development is needed, such as conducting longitudinal studies to examine the relationship over time and expanding research across various sectors to test the generalizability of the results. Additionally, incorporating variables like work stress and organizational support could help better understand the factors that may strengthen or weaken the impact of digital leadership on managers' psychological health. Overall, the study successfully highlights the importance of developing digital leadership skills not only to enhance institutional performance but also to improve managers' well-being, making it significant for both academic research and modern managerial practices.

Fourth Study

Classification and Synthesis of Quality Approaches in E-Government Services (Halaris, C & Others, 2007)

This study classifies and synthesizes different models of quality in e-government services. It aims to provide a comprehensive framework for analyzing the quality of e-services in the public sector. The research is based on a review of available literature on traditional public service quality and e-service quality, with a focus on the key factors that contribute to developing an integrated model for measuring and improving the quality of electronic services delivered to citizens.

The researchers analyzed 36 different approaches to evaluating service quality, categorizing them based on the dimensions they measure. The study addresses the factors influencing the quality of e-government services from a multi-dimensional perspective, including system quality, user experience, back-office process efficiency, and citizen satisfaction with the services provided. The findings emphasize the need for a quality model that can address various issues such as usability, information availability, reliability, and user interaction with digital systems.

One of the significant findings of the study is that the quality of e-services is not only dependent on the technology used but also extends to administrative and organizational aspects—such as the structure of e-governance and how well these services are integrated into the institutional framework of the government sector. The study also highlights that evaluating e-service quality should consider both objective and subjective dimensions: the former relies on specific technical criteria, while the latter depends on citizens' perceptions and reactions to the services.

While the study offers a comprehensive analytical framework, it still has areas that need further development. On the positive side, it provides a useful classification of different models used to measure e-service quality, assisting researchers and policymakers in identifying key factors for improvement. The analytical approach also enhances understanding of the challenges governments face in delivering high-quality digital services.

On the downside, the study lacks practical evaluation of the proposed models, as its analysis remains largely theoretical without actual case studies to test the effectiveness of the discussed models. Most of the models analyzed are based on European and American contexts, which may limit their applicability in other regions with different regulatory environments. Additionally, the study does not sufficiently address the cultural and social

challenges that may affect citizens' adoption of e-services—such as resistance to digital change or trust barriers in digital systems.

Based on these observations, this study can be considered a valuable contribution to improving the quality of e-government services. However, more experimental research is needed to assess the effectiveness of the proposed models in real-life settings. Expanding the study's geographic scope and analyzing the social and cultural factors affecting user experience could help develop a more comprehensive model for measuring and enhancing the quality of digital government services.

Fifth Study

Potential Dimensions for a Local E-Government Services Quality Model (Sá, F., & Others, 2016)

This study discusses the potential dimensions of local e-government, highlighting the challenges in developing and implementing such systems at the municipal level. The research problem stems from the need to establish a comprehensive framework for local e-government that can help improve service quality for citizens and enhance governmental effectiveness. While e-government has become an essential tool for improving efficiency and transparency, existing literature lacks an integrated model outlining the necessary factors for successful local implementation.

The study aims to offer a systematic perspective on how to develop local e-government in different contexts by analyzing various factors that influence the success of such systems. It does not focus on a specific country or region but instead seeks to provide a general model that can be applied to local governments globally, making its findings broadly applicable.

The research aims to create a local e-government framework that accounts for critical success factors such as technological infrastructure, public administration, citizen interaction, and regulatory policies. It also seeks to bridge gaps in current literature by offering a more holistic model that reflects the challenges and opportunities associated with implementing e-government systems in local contexts.

To address the research problem, the authors conducted a literature review of existing e-government studies and analyzed different models previously proposed. They examined key dimensions that play a central role in local e-government implementation, focusing on how to improve citizen interaction with these systems and enhance their contribution to improving government services. Based on this analysis, the study proposes a framework identifying the core dimensions of local e-government, emphasizing the integration of technology with public administration and regulatory policies.

The study identified several key factors influencing the success of local e-government. Among these, technological infrastructure emerged as a critical determinant of a local government’s ability to deliver effective digital services. The results also showed that success is not only dependent on technology availability but also on having clear regulatory policies that support digital transformation. Furthermore, involving citizens in designing and implementing these systems is essential to ensure they meet actual needs. The study concludes that successful implementation requires collaboration between government bodies and the community, and digital solutions must be adapted to the local environment for maximum benefit.

Overall, the study enhances understanding of the dimensions that should be considered when developing local e-government, providing a scientific basis to support policymakers in designing and implementing effective strategies. However, more applied research is needed to test the effectiveness of the proposed framework in different settings. Doing so could help refine and develop more accurate models that suit the needs of local governments across diverse countries.

Study Six

e-GovQual: A multiple-item scale for assessing e-government service quality (Papadomichelaki, X., & Mentzas, G., 2012)

This study investigates the development of a comprehensive scale for assessing the quality of e-government services. It aims to provide a multi-item tool to help measure the quality of services delivered through e-government platforms. The study stems from the lack of a unified scale that can reliably evaluate service quality, as most governments rely on varied and inconsistent standards, making cross-country or even intra-national comparisons difficult. Conducted in the context of e-government, the researchers focused on how to assess the quality of digital services provided to citizens. The study does not target a specific country but aims to present a universal model adaptable to various governmental contexts.

The primary objective of the study is to develop a standardized scale to accurately and consistently assess the quality of e-government services. The researchers aim to identify key factors affecting user experience so that government institutions can use this scale to enhance their digital services and better meet citizens' needs.

To address the absence of a unified scale, the study used a multi-method research approach, including a literature review on e-service quality and surveys to collect user experience data with digital government services. Based on this data analysis, the E-GovQual scale was developed. It consists of a set of criteria that evaluate service quality based on key dimensions such as ease of use, reliability, information quality, and security.

The study yielded several important findings. It confirmed that the quality of e-government services is influenced by a complex combination of technical and organizational factors—not just platform design or efficiency. User experience plays a central role in determining service quality, requiring services to be easy to use, reliable, and provide accurate, up-to-date information. Furthermore, trust and security were shown to be critical factors influencing citizens' willingness to use digital services.

This study is a valuable contribution to the field of e-government by offering a comprehensive scale that can help governments improve digital services based on data-driven assessments. However, further applied research is needed to test the effectiveness of this new scale in different governmental environments. Additionally, incorporating cultural and social factors may enhance the accuracy of the assessment and make it more responsive to the needs of users across different regions.

Study Seven

Measuring Service Quality in Malaysian Local Government: The SERVQUAL Approach

(Donnelly, M., & Others, 1995)

This study aims to evaluate the quality of services provided by local governments in Malaysia using the SERVQUAL model, which measures the gap between citizens' expectations and the actual performance of these governments. The importance of this study lies in the need to improve local government services and ensure they effectively meet citizens' expectations. High service quality in government institutions is vital for enhancing public satisfaction and trust, making its assessment essential for achieving high performance levels.

The study employed a quantitative approach by distributing questionnaires to a sample of citizens interacting with Malaysian local governments. The SERVQUAL model, comprising five key dimensions—reliability, responsiveness, assurance, empathy, and tangibles—was used to analyze the data. The goal was to identify gaps between expected and actual service quality, providing deeper insight into the weaknesses in service delivery.

The results revealed clear gaps across all SERVQUAL dimensions, with "responsiveness" scoring the lowest. Citizens felt that local governments were slow and ineffective in

responding to their needs. Conversely, "tangibles" received the highest satisfaction scores, indicating that infrastructure and physical facilities were more acceptable compared to other service aspects. The findings highlighted the urgent need to improve service quality by enhancing staff efficiency, upgrading digital infrastructure, and improving communication channels between local governments and citizens.

Based on these findings, the study recommends enhancing government staff capacity to respond promptly and effectively to citizen requests through intensive training focused on quick response and problem-solving. It also calls for strengthening communication channels to ensure transparent and clear information sharing, reducing the gap between expectations and actual service. Furthermore, the study emphasizes the importance of investing in digital solutions, such as automating processes and providing electronic platforms that facilitate citizen-government interaction.

Study Eight

A Multiple-Item Scale for Assessing E-Government Service Quality
(Papadomichelaki, X., & Mentzas, G., 2009)

This study aims to develop a multi-item scale for assessing the quality of e-government portals by analyzing factors that affect user satisfaction and the effectiveness of services delivered through digital platforms. With the increasing shift toward digitalization in government services, accurate evaluation tools are essential for measuring the efficiency of these portals and their ability to meet citizens' needs transparently and effectively.

The study employed a quantitative methodology, gathering data from users through questionnaires designed to assess their experience with e-government portals. The data was analyzed using advanced statistical methods, including exploratory and confirmatory factor analysis, to validate the scale's reliability and accuracy in measuring e-service quality. The study focused on key dimensions such as ease of use, information quality, security, and the availability of interactive services.

Key findings highlighted the importance of design quality and ease of access to information in shaping user satisfaction. The results showed a strong correlation between the efficiency of the e-government portal and citizens' trust in digital government services. Transparency and security significantly influenced the public's willingness to rely on these platforms. The developed scale demonstrated high reliability and validity, making it an effective tool for continuously evaluating and improving e-government portals.

Based on these findings, the study recommends adopting modern technological strategies to enhance user experience, such as developing more user-friendly interactive designs, strengthening security measures to protect personal data, and providing regularly updated, accurate information to ensure transparency and build trust. The study also suggests enhancing technical support channels and direct interaction with users to ensure faster issue resolution and improved satisfaction.

Ninth Study

"Building Citizen Trust towards e-Government Services: Do High Quality Websites Matter?" (Tan, C. W., et al., 2008)

This study explored the issue of building citizen trust in e-government services, with a focus on the role of website quality in enhancing that trust. As reliance on digital technology in delivering government services continues to increase, it becomes essential to understand the factors that influence citizens' acceptance and trust in these platforms. Trust is considered a fundamental factor in the success of e-government initiatives and in ensuring user engagement.

The primary objective of the study was to examine the relationship between the quality of government websites and the level of citizen trust in the services delivered through them. It

also aimed to analyze the various aspects of website quality—such as ease of use, security, and clarity of information—and their impact on user trust. Through this analysis, the study hoped to present a practical framework that could assist governments in improving their digital platforms and increasing citizen interaction.

The study adopted a quantitative methodology, collecting data through questionnaires distributed to a sample of users who had previously interacted with e-government services. The data were analyzed using advanced statistical models to examine the relationship between website quality and the level of citizen trust. The study focused on key elements such as interface design, cybersecurity, information accuracy, and response speed, measuring how each component affected overall trust in online services.

The results indicated that the quality of government website design plays a pivotal role in building citizen trust. Websites that provided a smooth user experience, accurate information, and reliable security protocols were found to significantly increase users' trust and likelihood of continued use. The study also highlighted that security is one of the most influential factors in citizens' decisions to use e-government services, as users expressed high sensitivity regarding the protection of their personal data and the information shared on these platforms.

Based on these findings, the study recommended that governments invest in improving the quality of their electronic platforms, not only by enhancing interface design but also by strengthening security measures, ensuring regular information updates, and offering effective user support channels. The study also proposed conducting future research focusing on the impact of cultural and social factors on citizens' acceptance of digital technologies in government interactions. This could help develop more integrated strategies for boosting trust in e-government services.

Tenth Study

"E-service quality model for Indian government portals: citizens' perspective" (Bhattacharya, D. & Others, 2012)

In their study titled *"E-service Quality Model for Indian Government Portals: Citizens' Perspective,"* Bhattacharya, Gulla, and Gupta aimed to provide both a theoretical and practical framework for measuring the quality of e-government services from the end-user's viewpoint. This comes amid the growing importance of digital governance as a means to facilitate interaction between citizens and the state. The study was based on the central hypothesis that the success of e-government initiatives does not rely solely on the readiness of infrastructure or the advancement of digital systems, but rather on the degree of citizen satisfaction with the quality of services provided via these platforms.

To achieve this goal, the researchers adopted an exploratory empirical methodology based on three main stages: a literature review to define the theoretical dimensions of service quality, the design of a preliminary questionnaire refined with the help of experts, and finally, a practical phase involving the distribution of the questionnaire to a sample of users of two prominent Indian government portals providing transport and tax services.

Using exploratory factor analysis, the study developed a model consisting of seven main dimensions that together form a measure of perceived service quality from the citizen's perspective. These dimensions were: citizen-centric service, ease of use, technical efficiency, privacy and security, transactional transparency, comprehensiveness of information, and information usefulness.

However, the findings revealed that only six of these dimensions had a statistically significant impact on perceived service quality. The "information usefulness" dimension did not show a notable effect, reflecting a weakness in managing citizen relationships, particularly in terms of effective and ongoing communication.

The results emphasized the importance of security and transparency as critical factors in strengthening citizen trust in digital services. Additionally, ease of use and citizen-centered design emerged as essential elements for ensuring the sustainable use of these services.
Therefore, the proposed model serves not only as an evaluation tool but also as a guiding framework that can be employed to improve the design of e-government portals and direct development efforts toward citizen priorities. The significance of this study lies in its practical orientation and reliance on field data, which gives its findings explanatory power and the potential to contribute to policy-making that aligns more closely with user expectations. This makes the study a valuable reference that can be adapted to similar contexts in developing countries seeking to enhance the performance of their e-government services.

Here's a clear **data extraction table** based on section 4.5 and the ten studies you provided:

No.	**Author(s) & Year**	**Research Objectives**	**Geographical / Contextual Setting**	**Methodology**	**Key Findings**	**Strengths**	**Limitations**
1	Eberl, J. & Drews, P. (2021)	Clarify dimensions of digital leadership, identify influencing factors, and uncover research gaps	Global; focus on commercial sector	Systematic literature review (96 studies)	Defined digital leadership as distinct from e-leadership; identified organizational, individual, and leader-specific factors	Comprehensive review; proposed analytical framework	Lacked practical application; no quantitative data; limited to commercial context
2	Benitez, J. et al. (2022)	Examine impact of digital leadership on innovation via platform digitization	European commercial companies	Mixed-methods: multiple-case study (10 firms) + survey (117 firms)	Platform digitization mediates link between digital leadership and innovation	Large dataset; theoretical & empirical model	Focused on private sector; cross-sectional data; limited cultural analysis
3	Zeike, S. et al. (2019)	Explore link between digital leadership skills	German ICT sector	Quantitative survey (n=368), regression	Positive link between digital leadership skills and	Novel link to mental health; validated scale	Cross-sectional; single company; limited generaliza

		and managers' psychological well-being		analysis, WHO-5 index	well-being		bility
4	Halaris, C. et al. (2007)	Classify & synthesize quality models for e-government services	E-government, mainly European & American contexts	Literature review of 36 approaches	Multi-dimensional framework for e-service quality	Useful classification; broad analytical view	No case studies; limited cultural applicability
5	Sá, F. et al. (2016)	Propose framework for local e-government quality	Global, municipal focus	Literature review	Identified core dimensions: tech infrastructure, regulation, citizen engagement	Broad applicability; holistic approach	No empirical testing; general model only
6	Papadomichelaki, X. & Mentzas, G. (2012)	Develop E-GovQual scale for e-service quality	Global	Literature review + survey	Multi-item scale for usability, reliability, info quality, security	Comprehensive measurement tool	Needs testing in diverse contexts
7	Donnelly, M. et al. (1995)	Evaluate Malaysian local government service quality via SERVQUAL	Malaysia, municipal services	Quantitative survey using SERVQUAL	Found gaps in responsiveness, assurance; tangibles scored highest	Practical recommendations; citizen-focused	Limited to one country; model may not suit digital era
8	Papadomichelaki, X. & Mentzas, G. (2009)	Develop scale for e-government portal	Global	Quantitative survey, factor analysis	Design & access key to satisfaction; trust &	Reliable validated scale	Limited to portal design factors

		quality			security critical		
9	Tan, C. W. et al. (2008)	Assess role of website quality in building citizen trust in e-gov services	Not specified; general e-government context	Quantitative survey	Website quality strongly linked to trust; security key	Practical trust-building framework	Lacks cultural factor analysis
10	Bhattacharya, D. et al. (2012)	Develop e-service quality model for Indian portals from citizen perspective	India, transport & tax portals	Literature review + expert input + survey; exploratory factor analysis	7 dimensions (6 significant) for service quality; security & transparency key	Field-based, practical model	One sector focus; some dimensions insignificant

If you want, I can also **add a final "Relevance to Current Study" column** to directly connect each study to your Qatar public sector research focus. That would make it even more useful for your systematic review section.

2.3 Analysis of Previous Studies and Research Gaps

A review of the existing literature on digital leadership and the quality of electronic services reveals that the theoretical and practical fields in this domain still suffer from fundamental imbalances on two levels. The first is that most studies have been concentrated in Western commercial and institutional contexts, particularly focusing on models from Europe or North America, with insufficient attention given to the governmental sector in Gulf and Arab countries. The second relates to the absence of a multi-layered explanatory approach that links digital leadership to institutional performance outcomes through intermediary variables that reflect the internal organizational environment.

A prominent example of this gap is the study by **Julia Eberl and Paul Drews**, which was based on a systematic literature review to define the concept of digital leadership and classify its influencing factors across three levels. However, the study remained purely theoretical and did not provide a clear explanation of how digital leadership translates into measurable results in institutional settings. It also failed to address intermediary variables that play a critical role in explaining the relationship between digital leadership and institutional performance—such as system quality, trust, or employee empowerment—and did not test its models in a real governmental environment. This forms a key gap that the current study seeks to address through field analysis in a specific Qatari context.

The study by **José Benitez** attempted to bridge the relationship between digital leadership and organizational innovation through platform digitization as a mediating variable. However, it focused on the European private sector, making it difficult to adapt its findings to the realities of governmental institutions in Qatar. Additionally, the study relied solely on cross-sectional data analysis without tracking the dynamics of the relationship or the

cumulative effects of digital leadership, and it overlooked internal structural variables such as employee empowerment or their interaction with digital systems. The current study addresses these limitations by examining the indirect mechanisms through which digital leadership impacts the quality of government services via mediators like trust, system quality, and employee empowerment.

Susanne Zeike's study, which linked digital leadership skills to psychological well-being, remained outside the scope of institutional performance. It focused solely on the mental health of managers without exploring the relationship between digital leadership and service or behavioral outcomes at the organizational level. Moreover, the study relied on a limited sample from a single telecommunications company and did not examine the transferability of results across sectors or countries. The gap here concerns not just the scope but also the nature of analysis—measuring the impact of digital leadership should extend to organizational and administrative outcomes. This is what the current study adopts by employing an integrated conceptual model that reflects the cultural and organizational specificities of Qatari government institutions.

In the domain of digital government services, studies such as that by **Christos Halaris** focused on classifying theoretical models for evaluating e-service quality but did not test them in real-world environments, nor did they consider digital leadership as a potential source for improving service quality. These studies also concentrated on technical and design dimensions without addressing organizational and human aspects of digital system implementation—such as staff training, system interaction, or employee empowerment. This gap in linking technology to human resources is common in prior literature and is addressed in the current study by incorporating the concepts of system quality and trust as mediators, and employee empowerment as a cognitive condition for sustained performance.

From the literature review, several research gaps can be identified that justify the need for this study and highlight its potential contribution to both theoretical and practical knowledge in the field of digital leadership within the governmental context:

1. **Lack of Focus on Employee Empowerment**: Most studies show a clear deficiency in addressing the relationship between digital leadership and employee empowerment as a cognitive variable that bridges digital transformation and employee behavior within institutions. Studies like Eberl and Drews (2021) focused on the theoretical structure of digital leadership without testing its direct or indirect impact on employee empowerment or its contribution to improving daily performance. This has left the link between digital leadership and employee empowerment absent from most explanatory models in the literature.
2. **Absence of an Integrated Model**: Previous studies have not presented an integrated model linking digital leadership, system quality, system trust, and employee empowerment as a sequential causal pathway leading to government service quality. Most research has relied on studying binary relationships or variables in isolation—such as Benitez et al. (2022), which examined the link between digital leadership and innovation through platform digitization, without addressing system quality, trust, or empowerment. Similarly, Zeike et al. (2019) focused on the relationship between digital leadership and mental health without connecting it to public service quality or the governmental institutional context.
3. **Scarcity of Field Studies in the Arab Gulf Context**: The literature lacks applied field studies examining these variables within the governmental sector of Gulf or Arab countries. Most prior studies focus on the European context or private commercial institutions. The commonly used explanatory models, such as SERVQUAL or DeLone and McLean, were developed and tested in cultural and institutional

environments that differ significantly from the realities of governmental institutions in Qatar, which are characterized by unique organizational traits such as centralized decision-making and a multinational work environment.

4. **Overemphasis on Technical Aspects**: Previous studies have generally emphasized the technical dimension of digital transformation without giving adequate attention to the behavioral and organizational aspects related to leadership and human interaction. For example, the study by Halaris et al. (2007) focused on conceptual models of e-service quality without addressing the role of leadership or employee empowerment, while other studies concentrated on system design without exploring the role of organizational culture or administrative dynamics that determine the effectiveness of these systems in a governmental setting.
5. **Neglect of Trust as a Core Variable**: Prior studies have not given enough importance to the concept of system trust as a psychological and organizational link between system quality and employee satisfaction or service quality. Trust has often been treated merely as a performance indicator, rather than a central mediating variable that influences user behavior and readiness to engage with digital environments. Including trust as an independent or mediating variable is thus a necessary addition for better understanding the relationship between digital leadership and institutional performance.

5.2 Comparison of the Results with Previous Studies

The results of the study revealed a set of statistically significant relationships between digital leadership, employee empowerment, system quality, trust in the system, and the quality of government services. These findings align well with previous literature and support the theoretical hypotheses upon which the conceptual model was built. Comparing these results with previous studies highlights important similarities, along with some interpretive differences that reflect the unique institutional context of Qatar.

The results regarding the impact of digital leadership on system quality and trust are consistent with the findings of Eberl and Drews (2021), who emphasized that successful digital leadership acts as a transformative force within organizations by directing technical resources, ensuring system integration, and promoting transparency and stability in digital work environments. However, the current study adds a more precise statistical dimension by directly testing these effects and linking them to measurable outcomes in service quality—something not fully addressed in Eberl and Drews' theoretically oriented study.

In terms of employee empowerment, this study found that empowerment significantly influences both system quality and trust, which aligns with the propositions of Psychological Empowerment Theory as presented by Thomas & Velthouse (1990). This is further supported by studies such as Zeike et al. (2019), which linked digital empowerment to psychological and professional adaptability in technical work environments. What distinguishes the current study, however, is that it not only confirmed these effects but also demonstrated that empowerment functions as a cognitive condition that facilitates improved digital performance via the system and trust—highlighting the importance of including it in digital institutional policies.

Regarding the impact of system quality and trust on service quality, the results are in line with the DeLone & McLean (2003) model, which argues that the success of digital systems is not measured by technical efficiency alone, but also by the degree of trust they inspire in users, ultimately leading to improved services. This is also supported by studies like Tan et al. (2008) and Papadomichelaki & Mentzas (2012), which showed that user trust in a system is a key indicator of digital experience quality and that system quality is a prerequisite for positive service evaluations.

As for the relationship between digital leadership and service quality, results indicated that the impact is both direct and indirect, partially aligning with Benitez et al. (2022), who highlighted the role of digital leadership in enhancing performance through platform digitization. However, the present study goes further by embedding this relationship within a causal model that connects leadership with system quality, trust, empowerment, and ultimately, service quality. This offers a more advanced explanatory model than prior studies, particularly in government contexts.

While most findings support previous literature, this study stands out for its focus on the Qatari government sector—an area that has received limited attention in past research, which has typically focused on commercial or Western settings. This makes the study's results a unique contribution, showing how concepts like digital leadership, empowerment, and trust manifest within a distinct cultural and institutional framework, offering quantitative evidence of their effectiveness in explaining the quality of government digital services in a Gulf Arab context.

Thus, it can be concluded that the results strongly support the existing literature in many respects while also extending it by introducing mediating variables and offering a composite model that links leadership, technology, and human factors. This broadens the scope of interpretation and contributes to a more holistic understanding of the success factors behind digital transformation in the public sector.

Answering the review questions

1) How is digital leadership conceptualized across contexts, and what key dimensions define it?

Across organizational and governmental contexts, **digital leadership** emerges as a multi-level capability that is distinct from e-leadership because it **orchestrates fundamental transformation**—of business models, structures, and people practices—rather than merely using ICTs to support existing processes (Eberl & Drews, 2021). Three nested levels consistently define its scope:

- **Organizational level**: vision and strategy for digital transformation; governance and decision rights; culture and values that support experimentation and learning; and agile decision-making architectures (Eberl & Drews, 2021). In practice, these capabilities are expressed through the **creation and scaling of digital platforms** that integrate processes and data across units (Benitez et al., 2022).
- **Individual (workforce) level**: HR practices that enable reskilling, knowledge sharing, virtual teamwork, and cross-functional collaboration, which together sustain adoption and use of digital tools (Eberl & Drews, 2021).
- **Leader-specific level**: a portfolio of skills—digital visioning, data-informed decision-making, orchestration across silos, and change facilitation—plus the ability to architect platform ecosystems and align them with strategic outcomes (Eberl & Drews, 2021; Benitez et al., 2022).

In public sector settings, these dimensions need **administrative and policy alignment** because service chains depend on back-office rules and interagency processes; thus, digital leadership must bridge **front-end citizen experience and back-office integration** (Halaris et al., 2007; Sá et al., 2016). Finally, digital leadership also has a **human sustainability** facet: leaders' digital competencies can operate as a resource that supports psychological well-being under change pressure (Zeike et al., 2019).

Key dimensions distilled: (1) strategic vision and governance, (2) platform/ecosystem orchestration, (3) culture/people enablement, (4) data-driven and agile decision-making, and (5) human-centric change competence (Eberl & Drews, 2021; Benitez et al., 2022; Zeike et al., 2019).

2) What relationships exist between digital leadership and outcomes (innovation, performance, well-being, citizen trust)?

- **Innovation and institutional performance**: Digital leadership enhances innovation **indirectly via platform digitization**—i.e., leaders build integrated digital platforms that enable rapid product/service development, process improvement, and responsiveness, which then lift innovation performance (Benitez et al., 2022). This mediation means that capability building around platforms (APIs, data integration, modular services) is the mechanism linking leadership behaviors to outcomes (Benitez et al., 2022).
- **Employee/manager well-being**: Higher digital leadership skill levels correlate with **better psychological well-being** among managers (measured by WHO-5), suggesting that competence in navigating digital change reduces stress and supports mental health; demographic controls (age, gender, tenure) do not attenuate this association (Zeike et al., 2019).
- **Citizen trust (via service quality)**: On the citizen side, trust in e-government is shaped by **perceived service quality**—notably usability, reliability, transparency, and security (Papadomichelaki & Mentzas, 2009, 2012; Tan et al., 2008; Bhattacharya et al., 2012). Digital leadership affects trust **through the quality of digital channels** it enables: secure, usable, transparent portals increase trust and usage intentions (Tan et al., 2008; Papadomichelaki & Mentzas, 2009, 2012; Bhattacharya et al., 2012). In local government contexts, improving **responsiveness** and back-office efficiency—areas under managerial control—is critical to closing expectation–performance gaps that otherwise erode satisfaction (Donnelly et al., 1995; Halaris et al., 2007).

Implication: To move the needle on performance and trust, digital leadership should prioritize **platform capability** (for innovation) and **service-quality drivers** (for citizen trust), while investing in leader and staff competencies that protect **well-being** (Benitez et al., 2022; Papadomichelaki & Mentzas, 2012; Zeike et al., 2019).

3) Which e-government service-quality models/dimensions best fit the public sector, and how do they influence satisfaction/engagement?

Three complementary lines of evidence converge on a **multi-dimensional** view that combines front-stage user experience with back-stage process quality:

1. **e-GovQual** provides a validated **multi-item scale** for public portals, emphasizing **ease of use, reliability, information quality, and security** as core drivers of perceived quality (Papadomichelaki & Mentzas, 2012; see also 2009). These dimensions directly map to satisfaction and reuse intention, with **trust/security** particularly salient for continued engagement (Papadomichelaki & Mentzas, 2009, 2012).
2. **Citizen-trust pathway via website quality**: High-quality government websites—smooth UX, accurate/up-to-date content, and strong security—significantly increase **citizen trust** and likelihood of continued use (Tan et al., 2008). Thus, **quality → trust → engagement** is a robust causal pathway for policy design (Tan et al., 2008).
3. **Citizen-centric e-service model (India)**: From the citizen perspective, **security/privacy, transactional transparency, ease of use, technical efficiency, citizen-centric design, and information comprehensiveness** are significant contributors to perceived service quality (Bhattacharya et al., 2012). Notably, "information usefulness" alone was not significant, underscoring that **interactional and procedural qualities** matter more than static content (Bhattacharya et al., 2012).
4. **SERVQUAL in local government**: Gaps persist across **reliability, responsiveness, assurance, empathy, tangibles**, with **responsiveness** often the weakest link—

highlighting the need for **faster service response and better communication** even as digital channels expand (Donnelly et al., 1995).

5. **Integration and back-office alignment**: Quality does not reside only in the front end. It depends on **system quality, back-office process integration, and institutional fit**—areas that require managerial coordination and policy alignment (Halaris et al., 2007; Sá et al., 2016).

Bottom line: For public sector applicability, combine **e-GovQual** (usability/reliability/info/security) with **trust-centric website attributes** (security, transparency), **citizen-centric design**, and **SERVQUAL-style responsiveness and assurance**, all underpinned by **back-office integration**. These attributes raise **satisfaction**, **trust**, and **repeat engagement** (Papadomichelaki & Mentzas, 2009, 2012; Tan et al., 2008; Bhattacharya et al., 2012; Donnelly et al., 1995; Halaris et al., 2007; Sá et al., 2016).

4) What gaps, methodological limits, and contextual factors should future research address—especially in non-Western/developing contexts?

Gaps & limits

- **Conceptual clarity vs. practical enactment**: Digital leadership is well-theorized but **under-operationalized** in government; many syntheses remain conceptual with limited case evidence (Eberl & Drews, 2021; Halaris et al., 2007).
- **Mediation and longitudinality**: The innovation link is **mediated by platforms**, yet most tests are **cross-sectional**; we need **longitudinal** and **quasi-experimental** designs to capture causal dynamics and capability maturation (Benitez et al., 2022; Zeike et al., 2019).
- **Well-being mechanisms**: Evidence on digital leadership and psychological health is **single-firm** and cross-sectional; multi-sector, multi-country studies should test moderators (e.g., workload, organizational support) and outcomes (burnout, engagement) (Zeike et al., 2019).
- **Measurement in public settings**: While e-GovQual/SERVQUAL scales are promising, many validations come from **commercial or Western contexts**; we need **context-specific validation** in government workflows and service mixes (Papadomichelaki & Mentzas, 2012; Donnelly et al., 1995).

Contextual factors for non-Western/developing countries

- **Regulatory and administrative readiness**: Local success hinges on **policy frameworks** and administrative capacity that support digital processes end-to-end (Sá et al., 2016; Halaris et al., 2007).
- **Infrastructure heterogeneity**: Variability in connectivity and legacy systems shapes feasible service levels; platform strategies must account for **interoperability and gradual integration** (Sá et al., 2016).
- **Culture and trust**: Security and transparency are universal, but **trust formation** may depend on local norms and prior experiences with government; future studies should model **cultural moderators** of the quality→trust link (Tan et al., 2008; Bhattacharya et al., 2012).
- **Citizen co-creation**: Evidence points to the importance of **citizen involvement** in design/implementation to ensure fit and adoption, especially at municipal levels (Sá et al., 2016).
- **Responsiveness at scale**: Persistent responsiveness gaps in local government suggest investing in **service orchestration**, workflow automation, and performance management alongside front-end UX (Donnelly et al., 1995; Halaris et al., 2007).

Concrete research directions

1. **Integrative models** that link **digital leadership → platform capability → back-office integration → service quality → trust/satisfaction/engagement**, tested in government agencies (Benitez et al., 2022; Halaris et al., 2007; Papadomichelaki & Mentzas, 2012; Tan et al., 2008).
2. **Mixed-methods**, multi-country studies in **non-Western** contexts to validate e-GovQual/SERVQUAL adaptations and to identify **cultural/administrative moderators** (Papadomichelaki & Mentzas, 2012; Donnelly et al., 1995; Bhattacharya et al., 2012; Sá et al., 2016).
3. **Leader and workforce outcomes** combining **well-being metrics** with performance indicators to understand **sustainable transformation** (Zeike et al., 2019).
4. **Field experiments or phased rollouts** to estimate causal effects of platform upgrades (e.g., security enhancements, transparency features) on **trust and usage** (Tan et al., 2008; Bhattacharya et al., 2012).

Findings

The review indicates that digital leadership is a multi-level capability that extends beyond traditional e-leadership, encompassing strategic, organizational, and human dimensions. At the organizational level, it involves setting a strategic vision, establishing governance structures, fostering a culture of experimentation, and designing agile decision-making processes. Platform and ecosystem orchestration enables the integration of processes and data, supporting innovation and responsiveness (Eberl & Drews, 2021; Benitez et al., 2022). At the workforce level, digital leadership emphasizes reskilling, knowledge sharing, and cross-functional collaboration, which sustain the adoption and use of digital tools (Eberl & Drews, 2021). At the leader-specific level, it includes competencies in digital visioning, data-informed decision-making, change facilitation, and the ability to align platforms with strategic outcomes (Eberl & Drews, 2021; Benitez et al., 2022). In public sector contexts, digital leadership also requires administrative and policy alignment to bridge front-end citizen experiences with back-office integration, while supporting human sustainability by promoting psychological well-being during periods of change (Halaris et al., 2007; Sá et al., 2016; Zeike et al., 2019).

Digital leadership has demonstrable relationships with key outcomes. Innovation and institutional performance are enhanced indirectly through platform development, which mediates the link between leadership behaviors and outcomes (Benitez et al., 2022). Leaders with high digital competence report better psychological well-being, suggesting that skillful navigation of digital change reduces stress and supports mental health (Zeike et al., 2019). Citizen trust in e-government is shaped by perceived service quality, including usability, reliability, transparency, and security (Papadomichelaki & Mentzas, 2009, 2012; Tan et al., 2008; Bhattacharya et al., 2012). Digital leadership indirectly fosters trust by enabling high-quality, secure, and user-friendly digital services (Tan et al., 2008; Papadomichelaki & Mentzas, 2009, 2012). In terms of e-government service quality, a combination of e-GovQual dimensions, trust-focused website attributes, citizen-centric design principles, and SERVQUAL responsiveness and assurance measures—supported by integrated back-office processes—emerges as the most effective framework for enhancing satisfaction, trust, and engagement (Papadomichelaki & Mentzas, 2009, 2012; Tan et al., 2008; Bhattacharya et al., 2012; Donnelly et al., 1995; Halaris et al., 2007; Sá et al., 2016).

Despite these insights, several gaps remain. Conceptually, digital leadership is well-theorized but under-operationalized in public sector contexts, with limited longitudinal and causal evidence (Eberl & Drews, 2021; Halaris et al., 2007). Existing measures of service quality

often originate from commercial or Western settings and may not fully capture the nuances of developing or non-Western countries (Papadomichelaki & Mentzas, 2012; Donnelly et al., 1995). Contextual factors, including infrastructure variability, administrative readiness, cultural norms, and citizen trust formation, significantly influence the effectiveness of digital leadership and service quality initiatives (Sá et al., 2016; Tan et al., 2008; Bhattacharya et al., 2012). Persistent responsiveness gaps in local government highlight the need for coordinated service orchestration and workflow automation (Donnelly et al., 1995; Halaris et al., 2007).

Conclusion

Digital leadership represents a strategic, integrative capability that is critical for achieving innovation, citizen trust, and sustainable workforce performance in the public sector. Its effectiveness relies on orchestrating platforms, enhancing service quality, and fostering a culture of learning and adaptation (Eberl & Drews, 2021; Benitez et al., 2022; Papadomichelaki & Mentzas, 2012). In non-Western and developing contexts, successful implementation depends on local administrative capacity, infrastructure readiness, and culturally informed trust-building mechanisms (Sá et al., 2016; Tan et al., 2008; Bhattacharya et al., 2012). The current evidence base, while insightful, remains fragmented and predominantly cross-sectional, underscoring the need for longitudinal, experimental, and context-specific research to fully understand causal pathways and practical implementation strategies (Benitez et al., 2022; Zeike et al., 2019).

Recommendations

For policymakers and public sector practitioners, adopting a platform-oriented approach is essential, ensuring interoperability between front-end portals and back-office systems (Benitez et al., 2022; Halaris et al., 2007). Service quality metrics—covering usability, reliability, security, and transparency—should be integrated into digital leadership performance frameworks (Papadomichelaki & Mentzas, 2012; Tan et al., 2008; Bhattacharya et al., 2012). Workforce development should be prioritized, with emphasis on digital literacy, change management skills, and well-being supports to sustain transformation outcomes (Zeike et al., 2019). Additionally, enhancing responsiveness through workflow automation and cross-agency coordination, as well as co-creating services with citizens, will improve adoption, trust, and satisfaction (Donnelly et al., 1995; Sá et al., 2016).

For researchers, there is a need to develop and validate public sector–specific digital leadership and service quality measures, particularly for non-Western contexts (Papadomichelaki & Mentzas, 2012; Donnelly et al., 1995; Bhattacharya et al., 2012). Longitudinal and quasi-experimental studies should be conducted to capture causal effects of digital leadership on innovation, performance, and trust (Benitez et al., 2022; Zeike et al., 2019). Studies should also explore moderators such as organizational culture, workload, and citizen trust norms (Sá et al., 2016; Tan et al., 2008). Integrated models linking leadership, platform capability, service quality, trust, and performance should be tested, and the impact of digital transformation leadership on manager and staff well-being should be systematically evaluated across sectors and countries (Benitez et al., 2022; Zeike et al., 2019).

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