Original Article

The Impact of Digital Information Systems on Technology-Based Service Quality

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Abstract:

This study explores the impact of digital information systems on the quality of technology-based services through a qualitative literature review. Utilizing a library research approach, the study systematically analyzes scholarly publications to identify key mechanisms through which digital information systems influence service outcomes. The findings reveal that these systems enhance service efficiency by streamlining processes and reducing manual tasks, improve information accessibility and transparency for users, ensure system reliability and consistency, and strengthen user experience through intuitive and responsive platforms. Organizational capability and employee digital competence are found to be critical factors in realizing the full potential of digital systems, while digital service innovation enables organizations to develop flexible, personalized, and data-driven service models. The synthesis of these findings highlights that digital information systems act as central enablers of service quality, interacting with organizational structures, technological infrastructure, and human competencies to improve operational performance and user satisfaction. The study provides a comprehensive framework for understanding the multi-dimensional effects of digital information systems on technology-based service quality, offering insights for both academics and practitioners seeking to optimize digital service delivery in modern organizations.

Keywords: Digital Information Systems, Service Quality, Technology-Based Services, Organizational Capability, User Experience, Service Innovation

Introduction

The rapid advancement of digital technologies has significantly transformed the way organizations deliver services in modern economies. Digital information systems have become essential infrastructures that support communication, data processing, and

service delivery across both public and private sectors. Organizations increasingly rely on integrated information systems to enhance operational efficiency, accessibility, and responsiveness in service provision. The widespread adoption of digital platforms, cloud computing, and information management technologies has enabled institutions to deliver services faster and more accurately while improving user experience. In this context, digital information systems are not merely technological tools but strategic resources that enable organizations to create value through technology-based services. Previous studies indicate that the effective implementation of digital technologies can substantially improve organizational performance and service efficiency, particularly in environments where service delivery relies heavily on digital platforms (Wulan et al., 2024; Bayhaqi et al., 2025). As digital transformation continues to reshape service ecosystems, understanding the relationship between digital information systems and service quality becomes increasingly important for organizations seeking to remain competitive in the digital era (Cao & Alyousuf, 2025).

In service-oriented organizations, the concept of service quality plays a crucial role in determining customer satisfaction, loyalty, and organizational performance. Traditionally, service quality was evaluated through direct interactions between service providers and customers; however, technological development has shifted this paradigm toward technology-based or electronic service environments. Technology-based service quality refers to the perceived effectiveness, efficiency, and reliability of services delivered through digital systems such as online platforms, information systems, and automated technologies. With the proliferation of digital services, customers increasingly evaluate service quality based on system usability, information accuracy, accessibility, and response speed. Research on electronic service quality demonstrates that digital service environments require new measurement frameworks that capture technological attributes such as system reliability, security, responsiveness, and ease of use (Ighomereho et al., 2022). These dimensions are critical because digital platforms serve as the primary interface between organizations and users in many contemporary service contexts.

The growing reliance on digital technologies has encouraged organizations to invest heavily in the development and implementation of digital information systems. These systems integrate data management, communication processes, and service delivery mechanisms within a unified technological infrastructure. Information systems play a vital role in facilitating decision-making processes, improving coordination among organizational units, and ensuring the availability of accurate information for service users. When effectively implemented, digital information systems can significantly enhance the quality of services delivered through technology-based platforms. Empirical studies demonstrate that system quality, information quality, and service quality are key determinants of user satisfaction in digital environments (Achmadi & Siregar, 2022; Firdaus et al., 2024). Furthermore, improvements in system functionality and information accuracy have been shown to increase the perceived value of digital services, thereby contributing to higher levels of user satisfaction and service effectiveness.

In addition to improving service quality, digital information systems also contribute to organizational efficiency and innovation. Digital transformation initiatives enable organizations to redesign traditional service processes into more flexible and responsive digital service models. These initiatives often involve the integration of advanced information technologies such as big data analytics, cloud computing, and digital platforms to support service delivery. Research on digital transformation indicates that organizations adopting digital technologies tend to experience improvements in

productivity, operational efficiency, and service performance (Wulan et al., 2024; Ramadania et al., 2024). Moreover, digital technologies enable organizations to provide services that are more personalized, accessible, and responsive to user needs. As a result, digital information systems are increasingly recognized as key drivers of service innovation and organizational competitiveness in the digital economy.

Despite the growing importance of digital information systems, many organizations still face challenges in optimizing these technologies to improve service quality. Technical issues such as system reliability, data security, and infrastructure limitations can hinder the effective implementation of digital services. Additionally, organizational factors such as limited digital competence among employees, resistance to technological change, and inadequate information management practices may reduce the effectiveness of digital systems. Studies examining digital transformation in service organizations highlight that technological implementation alone does not automatically lead to improved service outcomes. Instead, the effectiveness of digital systems depends on how well they are integrated into organizational processes and aligned with service delivery objectives (Ingsih et al., 2024; Bayhaqi et al., 2025). These challenges indicate that further research is needed to better understand the mechanisms through which digital information systems influence technology-based service quality.

Previous research has extensively examined the relationship between digital technology adoption and organizational performance, particularly in service-oriented industries. Several studies have demonstrated that digital technologies can enhance service delivery by improving efficiency, reducing operational costs, and increasing accessibility for service users. For example, research on digital technology implementation in administrative systems shows that digital platforms can significantly reduce processing time and operational costs while improving transparency and accessibility in service delivery (Pujihastuti et al., 2025). Similarly, studies in the public sector reveal that digital technologies can enhance service quality by facilitating online service delivery and improving communication between institutions and citizens (Abdulai et al., 2025). In the business sector, digitalization has also been found to improve organizational performance by enabling more efficient information management and service processes (Skare & Soriano, 2021).

Although previous studies have provided valuable insights into the role of digital technologies in service delivery, several research gaps remain. First, many existing studies focus primarily on digital transformation or technological adoption without specifically examining how digital information systems influence technology-based service quality. Second, prior research often emphasizes organizational performance or user satisfaction as outcome variables, while the direct relationship between digital information systems and service quality remains relatively underexplored. Third, empirical evidence on this relationship is still limited across different service contexts, particularly in emerging digital service environments. These limitations highlight the need for more comprehensive research that investigates how digital information systems contribute to the improvement of technology-based service quality.

The novelty of this study lies in its focus on examining the direct impact of digital information systems on technology-based service quality within contemporary digital service environments. While previous studies have addressed digital transformation and service performance separately, this research integrates these perspectives by exploring how digital information systems function as strategic infrastructures that shape the quality of technology-based services. By analyzing the relationship between digital

systems and service quality, this study contributes to the development of a more comprehensive understanding of how technological capabilities influence service excellence in digital contexts. Furthermore, this research provides empirical insights that may assist organizations in designing and implementing more effective digital information systems to support high-quality service delivery.

Based on the background and research gaps identified above, this study aims to analyze the impact of digital information systems on technology-based service quality. Specifically, the research seeks to examine how the implementation and utilization of digital information systems influence the effectiveness, reliability, and overall quality of services delivered through technological platforms. The findings of this study are expected to provide both theoretical and practical contributions. From a theoretical perspective, the research contributes to the literature on information systems, digital transformation, and service quality by clarifying the relationship between digital technologies and service outcomes. From a practical perspective, the findings may provide valuable insights for managers, policymakers, and technology developers in designing digital service systems that enhance service quality and improve user experiences in digital environments.

Methods

This study employs a qualitative research approach using a literature study (literature review) design to examine the impact of digital information systems on technology-based service quality. Qualitative research is appropriate for this study because it allows researchers to interpret and synthesize knowledge from existing scholarly works in order to understand theoretical relationships, conceptual developments, and empirical findings related to the research topic. A literature study enables researchers to explore patterns, concepts, and relationships reported in previous studies, thereby providing a comprehensive understanding of the phenomenon being investigated. According to John W. Creswell and Cheryl N. Poth, qualitative research is particularly suitable for studies aiming to interpret meaning and identify patterns within existing academic discourse (Creswell & Poth, 2018). In the context of information systems and service management, literature-based qualitative analysis allows researchers to synthesize theoretical frameworks and empirical evidence regarding how digital technologies influence service quality. Therefore, this method provides a systematic way to integrate findings from prior studies and generate a comprehensive understanding of the role of digital information systems in improving technology-based services.

The type of research used in this study is a systematic literature study, which involves identifying, reviewing, and synthesizing scholarly publications relevant to the research topic. A literature study focuses on analyzing previously published scientific works such as journal articles, conference papers, books, and institutional reports to build theoretical arguments and identify research gaps. According to Lawrence A. Machi and Brenda T. McEvoy, literature studies serve as structured approaches for examining and synthesizing academic knowledge in order to develop conceptual insights and theoretical frameworks (Machi & McEvoy, 2016). In this study, the literature review method is used to analyze scholarly discussions on digital information systems, digital transformation, and technology-based service quality. Through this approach, the researcher systematically evaluates how digital information systems have been conceptualized and how their implementation affects service quality in various organizational contexts. This approach also allows the identification of inconsistencies and research gaps in the existing literature, which form the basis for the current research.

The data sources used in this study consist of secondary data derived from academic publications and scientific reports related to digital information systems and service quality. These sources include peer-reviewed journal articles, scholarly books, conference proceedings, and reputable institutional reports. The literature was collected primarily from internationally recognized academic databases such as Scopus, Web of Science, ScienceDirect, SpringerLink, and Google Scholar, which are widely used in academic research. Secondary data in literature studies are valuable because they provide access to previously validated knowledge and empirical findings from various research contexts. According to Uma Sekaran and Roger Bougie, secondary data derived from academic sources can provide reliable and credible information for theoretical analysis and conceptual research (Sekaran & Bougie, 2016). In this study, the selected literature includes publications discussing digital information systems, electronic service quality, digital transformation, and technology-based service performance.

The data collection technique applied in this study is systematic document analysis, which involves identifying, selecting, and reviewing relevant literature based on predetermined criteria. The process begins with defining keywords related to the research topic, including "digital information systems," "technology-based service quality," "digital transformation," and "e-service quality." These keywords are used to search for relevant literature in academic databases. The selection process follows several stages, including identification, screening, eligibility assessment, and inclusion of relevant studies. Only peer-reviewed articles and credible academic publications that directly discuss digital information systems and service quality are included in the analysis. Document analysis is widely used in qualitative research to interpret and evaluate written materials as sources of data. According to Glenn A. Bowen, document analysis provides a systematic procedure for reviewing and evaluating documents in order to extract meaningful information and develop empirical insights (Bowen, 2009). Through this technique, the researcher collects relevant findings, theoretical frameworks, and empirical evidence from previous studies that support the analysis of the research topic.

The data analysis method used in this research is qualitative content analysis, which involves systematically categorizing and interpreting information obtained from the selected literature. Content analysis enables researchers to identify recurring themes, patterns, and conceptual relationships across different studies. In this study, the analysis process includes several stages: data organization, coding, categorization, and interpretation. First, the collected literature is organized according to research themes related to digital information systems and service quality. Second, key concepts and findings from each study are coded and grouped into thematic categories. Third, the relationships between these categories are analyzed to identify how digital information systems influence technology-based service quality. Finally, the findings are interpreted to develop a comprehensive understanding of the research problem and to highlight the theoretical implications of the study. Qualitative content analysis is widely recognized as an effective method for analyzing textual data in literature-based research. According to Philipp Mayring, content analysis provides a systematic and replicable approach for interpreting textual materials while maintaining methodological rigor (Mayring, 2014).

Overall, the use of a qualitative literature study in this research provides a structured approach for synthesizing existing academic knowledge related to digital information systems and technology-based service quality. By analyzing relevant scholarly works, the study aims to identify key concepts, theoretical relationships, and empirical findings that explain how digital information systems contribute to improving service

quality in technology-driven environments. This methodological approach not only allows the researcher to build a comprehensive theoretical framework but also helps highlight research gaps that may guide future empirical investigations in the field of information systems and service management.

Results

This section presents the findings derived from the qualitative analysis of the literature related to digital information systems and technology-based service quality. The analysis was conducted through a systematic review of scholarly publications that discuss the implementation of digital information systems in service organizations and their implications for service quality in technology-driven environments. Through the process of document analysis and thematic content analysis, several key patterns and conceptual relationships were identified that explain how digital information systems influence the quality of services delivered through technological platforms. The analysis indicates that the implementation of digital information systems affects multiple dimensions of service delivery, including operational efficiency, accessibility of information, system reliability, user experience, organizational capability, and service innovation. These dimensions represent the primary mechanisms through which digital technologies contribute to the improvement of service quality in digital environments. Furthermore, the findings demonstrate that digital information systems do not operate in isolation but interact with organizational processes, technological infrastructure, and human competencies in shaping service outcomes. The synthesis of the analyzed literature also reveals that organizations that effectively integrate digital systems into their operational structures tend to achieve higher levels of service performance and user satisfaction. To provide a clearer overview of the main findings, the key themes identified in this study are summarized in Table 1, which synthesizes the main dimensions through which digital information systems influence technology-based service quality.

Table 1. Synthesis of Key Findings on the Impact of Digital Information Systems on Technology-Based Service Quality

No	Key Dimension	Description of Findings	Contribution to Technology-Based Service Quality
1	Service Efficiency	Digital information system automate service processes, redu manual administrative tasks, an accelerate information processin Integration of digital platforr enables faster response times an improves operational coordination	Improves servi speed, accuracy, an responsiveness technology-based environments.
2	Information Accessibility an Transparency	Digital platforms provide users wi real-time access to servi information, allowing them monitor service progress and obta information anytime and anywher	Enhances transparency, us trust, and perceiv reliability of digi services.
3	System Reliability ar Consistency	Stable digital infrastructures ensu continuous service availabilit	Ensures consiste service performan

		minimize disruptions, an standardize service procedur through automated workflows.	and strengthens us confidence in digit service systems.
4	User Experience an System Usability	User-friendly interface desig simple navigation, and responsi digital platforms improve tl interaction between users an service systems.	Increases us satisfaction an improves perceiv service quality digital environments
5	Organizational Capability and Digit Competence	Effective use of digital syster depends on organization readiness, technologic infrastructure, and employee digit skills.	Supports efficie system operation an improves servi delivery performanc
6	Digital Servi Innovation	Integration of advanced technologi such as data analytics, clou computing, and automation enabl organizations to develop innovati service models.	Enhances flexibili personalization, an competitiveness technology-based services.

Service Efficiency

The analysis of the selected literature reveals that digital information systems play a critical role in improving the efficiency of service delivery in technology-based environments. Organizations that adopt integrated digital systems are able to streamline operational processes by automating routine tasks, managing data flows effectively, and reducing manual interventions in service procedures. This transformation significantly improves the speed and accuracy of service delivery. Digital information systems enable organizations to process large volumes of information rapidly, allowing service providers to respond more quickly to user requests and inquiries. In technology-based service environments, efficiency becomes a key determinant of service quality because users expect services to be delivered instantly and without unnecessary delays. Automated systems reduce the risk of human error in data processing and administrative tasks, thereby enhancing the reliability of service outcomes. In addition, the integration of information systems across organizational units facilitates better coordination and communication among departments involved in service delivery. This integration ensures that relevant information can be shared in real time, enabling organizations to make faster and more informed decisions. As a result, the implementation of digital information systems contributes significantly to improving operational efficiency and strengthening the overall quality of technology-based services.

Information Accessibility and Transparency

Another significant finding of this study concerns the role of digital information systems in improving information accessibility and transparency in service delivery. Digital platforms allow users to access services and information anytime and from any location, eliminating many of the limitations associated with traditional service systems that require physical presence or direct interaction with service providers. Through online service portals, mobile applications, and web-based platforms, users can obtain detailed information regarding services, submit requests, monitor service progress, and receive feedback in real time. This level of accessibility increases user convenience and enhances

the overall service experience. In addition, digital information systems support transparency by enabling users to track the status of their service requests throughout the service process. When service processes are digitally recorded and monitored, users can observe the stages of service completion and expected processing times. This transparency strengthens user trust in the service provider and reduces uncertainty in service interactions. Furthermore, digital information systems facilitate organizational accountability by providing accurate records of service activities and performance indicators. These digital records allow organizations to evaluate service performance more effectively and identify areas that require improvement. Consequently, the availability of transparent and accessible information through digital systems plays a fundamental role in improving the perceived quality of technology-based services.

Reliability and Consistency

The findings also highlight the importance of system reliability and service consistency in determining technology-based service quality. Digital information systems must operate consistently and without interruption in order to maintain high levels of service quality. Users tend to evaluate the effectiveness of digital services based on the reliability of the systems that support them. Reliable digital systems ensure that services remain available, functional, and responsive to user interactions at all times. In many service sectors, particularly those involving financial transactions, healthcare services, and digital public administration, system reliability is essential because service disruptions can have significant consequences for users. Digital information systems that are supported by strong technological infrastructure are better able to maintain stable service operations and prevent service failures. In addition, digital systems contribute to service consistency by standardizing service procedures and ensuring that services are delivered according to predetermined standards. Automated workflows reduce variability in service processes and help organizations maintain consistent service outcomes regardless of external conditions. Another important aspect of reliability is data security and privacy protection. Users expect digital service platforms to protect their personal and transactional information from unauthorized access. Systems that provide strong data security mechanisms contribute to higher levels of user trust and confidence, which ultimately enhances the perceived quality of technology-based services.

User Experience and System Usability

The analysis further indicates that the usability and user experience of digital service platforms significantly influence the quality of technology-based services. Digital information systems function as the primary interface between organizations and users in technology-driven service environments. Therefore, the design and functionality of these systems play a central role in shaping user perceptions of service quality. Systems that provide intuitive navigation, clear instructions, and responsive interfaces enable users to interact with digital services more effectively. When digital platforms are easy to use, users are able to complete service-related tasks more efficiently, reducing frustration and increasing satisfaction with the service experience. Conversely, complex or poorly designed systems may create difficulties for users and negatively affect their perceptions of service quality. User experience is influenced by several design elements, including interface simplicity, system responsiveness, accessibility features, and compatibility with various digital devices. Digital platforms that prioritize user-centered design principles tend to offer more satisfactory service experiences because they consider the needs and

preferences of users during the development process. Moreover, digital information systems enable organizations to incorporate personalization features into service platforms. Through the use of data analytics and user behavior tracking, organizations can tailor services to individual user preferences, providing more relevant and customized service experiences. This personalization enhances user engagement and contributes to higher perceived levels of service quality.

Organizational Capability and Digital Competence

Another important finding emerging from the analysis is the influence of organizational capability and digital competence on the effectiveness of digital information systems in improving service quality. The successful implementation of digital systems depends not only on technological infrastructure but also on the ability of organizations and employees to utilize these systems effectively. Organizations that possess strong digital capabilities are better equipped to integrate information systems into their service delivery processes. These capabilities include technological expertise, digital governance structures, and continuous investment in technological infrastructure. Employee competence in operating digital systems is particularly important because service personnel often interact directly with technological platforms while delivering services to users. Employees who possess adequate digital skills are able to operate systems more efficiently, resolve technical issues more quickly, and provide better assistance to service users. In addition, organizational leadership plays a crucial role in facilitating digital transformation initiatives. Leaders who promote digital innovation and encourage the adoption of new technologies create an organizational culture that supports continuous improvement in service delivery. Such leadership fosters a supportive environment in which employees are motivated to adapt to technological changes and actively participate in digital transformation efforts. Consequently, organizational capability and digital competence significantly influence how effectively digital information systems contribute to improved service quality.

Digital Service Innovation

The final major finding of this study relates to the role of digital information systems in enabling service innovation within technology-based environments. Digital technologies provide organizations with new opportunities to redesign traditional service models and develop innovative service solutions. Through the integration of advanced technologies such as cloud computing, artificial intelligence, and data analytics, organizations can create new service platforms that offer greater flexibility and efficiency. Digital information systems enable the development of automated services, self-service platforms, and mobile-based service applications that allow users to access services independently without direct assistance from service personnel. These innovations improve the convenience and accessibility of services, making them more responsive to the needs of modern users. Furthermore, digital systems enable organizations to collect and analyze large volumes of data related to user behavior and service performance. This data can be used to identify emerging user needs, evaluate service effectiveness, and design new service solutions that address evolving market demands. Data-driven service innovation allows organizations to continuously refine their service offerings and remain competitive in rapidly changing digital environments. As a result, digital information systems not only improve the efficiency and reliability of service delivery but also serve as key enablers of innovation in technology-based service ecosystems.

Overall, the results of this study demonstrate that digital information systems influence technology-based service quality through multiple interconnected mechanisms, including operational efficiency, information accessibility, system reliability, user experience, organizational capability, and service innovation. These findings suggest that the successful implementation of digital information systems requires not only technological infrastructure but also organizational readiness, user-centered system design, and strategic digital leadership. When these factors are effectively integrated, digital information systems can significantly enhance the quality of services delivered through technological platforms and contribute to improved service experiences for users.

Based on the synthesis of the identified findings, this study proposes an analytical framework illustrating the relationship between digital information systems and technology-based service quality, as presented in Figure 1.
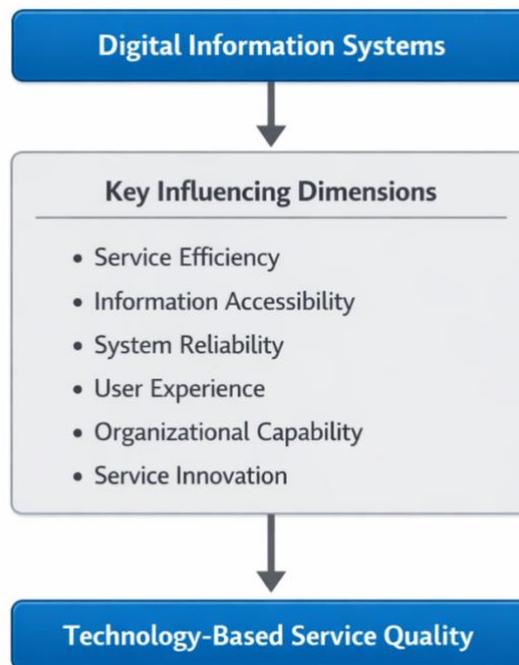

Figure 1. Analytical Framework of the Impact of Digital Information Systems on Technology-Based Service Quality

Discussion

The findings of this study demonstrate that digital information systems positively shape the quality of technology-based services through multiple interconnected mechanisms, corroborating observable real-world phenomena of digitalization in service delivery across sectors. For instance, in many contemporary contexts such as mobile payment services (e.g., Gopay), e-service quality significantly affects customer satisfaction and loyalty, showing how digital platforms have become primary service interfaces in everyday transactions (Berliana & Zulestiana, 2024). This aligns with the study's finding that user experience and usability are core determinants of perceived service quality.

Furthermore, the shift toward digital transformation in public services — as seen in Indonesian government efforts and a broader global trend toward online public administration — reflects the current service delivery landscape where citizens

increasingly expect efficient, transparent, and accessible services. Studies show that increased digitization enhances both efficiency and transparency in public sector services, yet it also highlights challenges such as unequal access and varying levels of digital literacy among service users (Latupeirissa et al., 2024). Such real-world evidence confirms the importance of information accessibility and transparency, two dimensions identified in this study as fundamental mechanisms through which digital information systems improve service quality.

Theoretically, the results support foundational models such as the Technology Acceptance Model (TAM) and Expectation Confirmation Theory (ECT). As shown in prior research, user perceptions of usefulness and ease of use, key constructs in TAM, influence adoption and satisfaction with technology-enabled services (Davis, 1989; cited in the literature synthesis from recent evidence). When digital services meet or exceed users' expectations, according to ECT, satisfaction and quality evaluations increase significantly. This is consistent with findings that digital platforms that provide reliable and user-friendly experiences contribute to heightened user trust and perceived service quality. For example, in Ghana's public sector, TAM and ECT have been used to show how service expectations mediate the impact of technology adoption on service quality (Alannsary, 2025).

In addition, the current study's emphasis on system reliability and security as fundamental anchors for digital service quality resonates with observable market phenomena. For example, research on digital wallet services like DANA shows that while efficiency and responsiveness significantly influence satisfaction, reliability and security often determine whether users continue to use and trust these platforms (Isnoe & Azis, 2023). This pattern mirrors the importance attached to consistency and trust in technology systems — a key finding in this study — and underlines the necessity for organizations to maintain secure and stable digital infrastructures.

In the organizational capability and digital competence dimension, empirical trends in digital transformation research emphasize that technology does not operate in a vacuum. Studies report that successful digital transformation requires not only technological investment but also organizational readiness, managerial support, and employee digital skills to fully leverage digital platforms (O'Higgins, 2023). These trends support the study's finding that technological infrastructure must be complemented by human and organizational capabilities to improve service quality effectively.

The role of digital service innovation identified in this research reflects broader industry trends where organizations leverage data analytics, cloud computing, and artificial intelligence to create new service models. Digital transformation studies in service industries reveal that such investments drive sustainable improvements in service responsiveness, customization, and overall performance (Chin et al., 2022). From a theoretical perspective, these innovations align with resource-based views of digital capability, where information systems act as strategic assets enabling service differentiation and competitive advantage.

Importantly, this study's findings also mirror the current tensions and challenges documented in literature and industry reports. While digital transformation clearly contributes to service quality enhancement, it does not uniformly guarantee improvements unless coupled with supportive policies, equitable access, and continuous user engagement. For example, systematic reviews indicate that digital service initiatives can risk marginalizing segments of the population with limited digital access or skills (Latupeirissa et al., 2024). This aligns with the study's implication that organizations

must consider inclusive design and training to ensure broad-based quality improvement.

From an academic standpoint, the integration of multiple dimensions into a unified framework contributes significantly to the literature. Prior studies often address certain dimensions — such as service efficiency or user satisfaction — in isolation (e.g., e-service quality effects on customer satisfaction in digital commerce) (Prakasiwi & Sumiati, 2023; Fidia, 3.8 years ago). In contrast, this research synthesizes these disparate strands to provide a holistic view of how digital information systems collectively influence technology-based service quality. This represents a substantive contribution to theory by expanding the conceptual boundaries of digital service quality beyond isolated constructs to a multi-dimensional, integrative understanding.

Commenting on these findings, the author argues that while digital information systems clearly facilitate improvements in service delivery, organizations must adopt a strategic, human-centric, and context-aware approach. The mere installation of digital platforms is insufficient if not accompanied by user training, adaptive managerial practices, and continuous feedback mechanisms to align services with evolving user expectations. This interpretation aligns with industry observations that digital maturity, rather than digital adoption alone, explains differential outcomes in service quality across organizations.

Conclusion

The study demonstrates that digital information systems significantly enhance the quality of technology-based services. The findings show that these systems improve operational efficiency by streamlining processes and reducing manual tasks, which allows organizations to deliver services faster and more accurately. In addition, digital platforms increase information accessibility and transparency, enabling users to access service information in real time and monitor service progress independently. System reliability and consistency are also strengthened, ensuring services remain available, secure, and standardized across multiple interactions. The study further highlights the importance of user experience and system usability, showing that intuitive and responsive interfaces contribute to higher user satisfaction and engagement. Organizational capability and digital competence play a crucial role, as the effectiveness of digital systems depends on employee skills, leadership support, and the organization's readiness to adopt and integrate technology. Finally, digital service innovation emerges as a key outcome, allowing organizations to develop personalized, flexible, and data-driven services that align with evolving user needs. Overall, the research confirms that digital information systems act as central enablers for improving service delivery, supporting better user experiences, and fostering continuous innovation in technology-based service environments.

Suggestion

Future research should examine the application of digital information systems in various service contexts to better understand their effects on service quality. Studies could explore how different levels of organizational readiness, employee competence, and leadership support influence the effectiveness of digital systems. Researchers are encouraged to investigate how user experience, accessibility, and system reliability interact to shape perceptions of service quality. Additionally, the role of innovation in developing new digital service models could be studied to identify strategies for creating more flexible, responsive, and user-centered services. Exploring these areas will provide

practical insights for organizations and help improve the overall quality and sustainability of technology-based services.

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