

Analysis of Statistical Information System Service Quality Using the SERVQUAL Method: A Systematic Literature Review

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ABSTRACT

The advancement of information technology has encouraged government agencies to leverage information systems to support data management and dissemination to the public. One such implementation is the Statistical Information System, which provides statistical data to support planning, monitoring, and evidence-based decision-making. Service quality is a critical determinant of user satisfaction with such systems, yet comprehensive synthesis of empirical evidence regarding the service quality of government Statistical Information Systems remains limited. This study aims to analyze the service quality of government Statistical Information Systems using the SERVQUAL method through a Systematic Literature Review (SLR) approach. The SERVQUAL method evaluates service quality across five dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy. Following the PRISMA-based SLR procedure, the review process encompassed identification, screening, eligibility assessment, and inclusion of relevant studies, followed by data extraction, frequency-based analysis, and synthesis. A total of 50 articles published between 2015 and 2026 were retrieved from Google Scholar, Garuda, and ScienceDirect. The frequency analysis indicates that Reliability (28%), Responsiveness (24%), and Assurance (20%) are the most dominant SERVQUAL dimensions reported in prior studies, followed by Tangibles (16%) and Empathy (12%). The synthesis further reveals a consistent positive relationship between SERVQUAL-based service quality and user satisfaction, trust, and continued system usage. This study contributes a structured theoretical foundation and practical recommendations for improving the service quality of government Statistical Information Systems and provides a reference for future empirical and methodological research.

Keywords: Statistical Information System; Service Quality; Servqual; User Satisfaction; Systematic Literature Review.

INTRODUCTION

The rapid development of information technology has driven various organizations, including government agencies, to utilize information systems as tools for managing and disseminating information. Information systems are not only used to store and process data, but also play a role in supporting more effective and efficient decision-making processes. Therefore, the quality of information system services is an aspect that requires careful attention to ensure that the information provided can be optimally utilized by users.

Government agencies across Indonesia increasingly rely on Statistical Information Systems as platforms for disseminating regional development data. These systems serve diverse stakeholders—planners, evaluators, and policymakers—who depend on accurate and accessible statistical information. As demand for digital public services rises, periodic evaluation of information system service quality becomes essential to ensure alignment

with user expectations. According to Kotler and Keller (2012), user satisfaction reflects the degree to which perceived service performance meets or exceeds the expectations held by users.

Statistical Information Systems play a strategic role in the delivery of public services by enabling transparent, data-driven governance. As user demand for responsive and reliable digital services grows, continuous quality assessment is critical to maintaining public trust and improving the effectiveness of these systems. According to Parasuraman, Zeithaml, and Berry (1988), service quality can be measured through the gap between users' perceptions and expectations of the services received. One of the methods most widely used to measure service quality is SERVQUAL, which consists of five main dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy. This method has been widely applied in studies evaluating information system service quality across sectors such as banking, e-commerce, education, healthcare, and e-government.

Several previous studies have shown that information system service quality has a significant influence on user satisfaction. Angraini and Nofriansyah (2019) found gaps in the Responsiveness and Reliability dimensions of academic information systems, while other studies have shown that Reliability and Assurance are important factors in improving user satisfaction with digital-based information systems. However, despite the abundance of SERVQUAL-based studies across various information systems, research that specifically focuses on government Statistical Information Systems remains comparatively scarce and fragmented across disciplines such as public administration, information systems, and statistics.

Research Gap

A review of the existing body of literature reveals several notable gaps that motivate the present study. First, although SERVQUAL has been extensively applied to evaluate the service quality of academic information systems, banking applications, e-commerce platforms, and general e-government portals, there remains a paucity of studies that specifically synthesize empirical findings on the service quality of government Statistical Information Systems. Most prior reviews either address information systems in general or focus on a single sectoral context, leaving the statistical-information domain underrepresented in the cumulative body of evidence.

Second, existing primary studies on Statistical Information Systems tend to be conducted in isolation, employing varying instruments, sample characteristics, and analytical techniques, which makes it difficult for practitioners and researchers to draw generalizable conclusions regarding which SERVQUAL dimensions consistently emerge as the most influential. Without a systematic synthesis, valuable patterns regarding dominant service-quality dimensions, common implementation problems, and effective improvement strategies remain scattered and underutilized.

Third, the urgency of this research is reinforced by the accelerating digitalization of government services in Indonesia and globally. As Statistical Information Systems become increasingly central to evidence-based policymaking, transparency initiatives, and public accountability, ensuring that these systems meet user expectations is no longer merely a technical concern but a matter of public-sector governance quality. A systematic, evidence-based understanding of which service-quality dimensions most strongly affect user satisfaction can directly inform resource allocation, system redesign priorities, and policy decisions aimed at improving digital public services.

Against this backdrop, this study addresses the identified gap by conducting a Systematic Literature Review (SLR) that specifically synthesizes findings from studies applying the SERVQUAL and E-SERVQUAL methods to information systems, with particular attention to Statistical Information Systems and analogous government digital services. By consolidating and critically analyzing 50 relevant studies, this research aims to identify, analyze, and synthesize an evidence-based overview of the SERVQUAL dimensions that most significantly influence user satisfaction with government Statistical Information Systems.

Research Questions

To guide the systematic literature review and address the identified research gap, this study formulates the following research questions (RQ):

- RQ1: What SERVQUAL dimensions are most dominant in evaluating Statistical Information System service quality?
- RQ2: How does SERVQUAL influence user satisfaction in Statistical Information Systems?
- RQ3: What common problems and improvement opportunities are identified in previous studies?

LITERATURE REVIEW

Information Systems

An information system is a combination of people, hardware, software, communication networks, and databases that work in an integrated manner to collect, process, store, and present information to support decision-making within an organization. A quality information system is capable of providing accurate, relevant, and timely information to its users.

Service Quality

Service quality refers to the extent to which a service is capable of meeting the needs and expectations of users. According to Kotler and Keller (2012), user satisfaction arises when the performance of the service received meets or exceeds user expectations. Therefore, service quality is an important factor in determining the level of user satisfaction with an information system.

SERVQUAL Method

SERVQUAL is a service quality measurement method developed by Parasuraman, Zeithaml, and Berry (1988). This method measures service quality based on the difference between users' expectations and perceptions of the services received. SERVQUAL consists of five main dimensions, described as follows.

- a. Tangibles (Physical Evidence): Describes the physical appearance of the system, supporting facilities, and ease of interface use.
- b. Reliability: The ability of the system to provide accurate, consistent, and dependable services.
- c. Responsiveness: The ability of the system or service provider to respond quickly to user needs.
- d. Assurance: The ability of the system to provide a sense of security, trust, and confidence to users.
- e. Empathy: The attention and concern of the service provider for user needs.

Systematic Literature Review (SLR)

A Systematic Literature Review (SLR) is a research method conducted systematically to identify, evaluate, and interpret research relevant to a specific topic. This method enables researchers to obtain a comprehensive overview of research developments and to identify patterns of findings that emerge across various prior studies. An SLR is distinguished from a traditional narrative review by its explicit, replicable protocol for searching, screening, and synthesizing evidence, which reduces selection bias and enhances the transparency and reliability of the review process.

RESEARCH METHODOLOGY

This study employs the Systematic Literature Review (SLR) method, which is a research approach conducted systematically to identify, evaluate, and interpret research findings relevant to the topic under investigation. The research stages consist of the following.

- Planning: The research topic is determined and research questions are formulated regarding the service quality of the Statistical Information System using the SERVQUAL method.

- Literature Searching: Articles are searched through various scientific databases such as Google Scholar, Garuda, and ScienceDirect using predetermined keywords.
- Literature Selection: The obtained articles are screened based on inclusion and exclusion criteria to obtain articles relevant to the research topic.
- Data Extraction: Key data from the selected articles are collected, including author name, publication year, research object, research method, and research findings.
- Analysis and Synthesis: The collected data are analyzed to identify findings related to information system service quality using the SERVQUAL method.

PRISMA-Based SLR Process

To enhance the transparency and replicability of the review process, the article selection procedure was structured according to the four standard PRISMA stages: Identification, Screening, Eligibility, and Included Studies. The detailed flow of each stage is presented in Table 1.

Stage	Description and Outcome
1. Identification	An initial search was conducted across Google Scholar, Garuda, and ScienceDirect using the Boolean keyword combinations described in Section 3.2. The search yielded an initial pool of 187 records published within the last ten years (2015–2026).
2. Screening	Titles and abstracts of the 187 records were screened to remove duplicates (23 records) and articles clearly unrelated to information system service quality or SERVQUAL/E-SERVQUAL (61 records), resulting in 103 records eligible for full-text assessment.
3. Eligibility	The full texts of the 103 records were assessed against the inclusion and exclusion criteria presented in Table 2. A total of 53 records were excluded for reasons such as the absence of a clearly described research method (21), absence of explicit findings related to SERVQUAL dimensions (19), or being non-scientific/opinion pieces (13).
4. Included Studies	A final set of 50 articles met all inclusion criteria and were included in the data extraction, analysis, and synthesis stages, as presented in Table 3 (Literature Review Results).

Search Strategy

The literature search process was conducted using several scientific databases by utilizing a combination of keywords relevant to the research topic. The keywords were structured using Boolean operators (AND and OR) to broaden and narrow the search results, as follows.

(“Service Quality” OR “E-Service Quality” OR SERVQUAL OR “E-SERVQUAL”)

AND (“Information System” OR “Management Information System” OR “Web Information System” OR “Government Information System” OR “Information Technology Service” OR “E-Government”)

AND (“User Satisfaction” OR “Customer Satisfaction” OR “Citizen Satisfaction” OR “User Experience” OR “User Perception” OR “User Acceptance”)

AND (“Public Service” OR Government OR “Public Sector”)

Table 2. Inclusion and Exclusion Criteria

Criteria	Description
Inclusion	Scientific articles in Indonesian and English; articles published within the last 10 years (2015–2026); articles discussing SERVQUAL or E-SERVQUAL methods; research objects include information systems, websites, or applications; articles with clear research findings.
Exclusion	Articles that do not discuss information system service quality; articles that are opinions or non-scientific; articles that do not explain the research method; articles without clear research findings; duplicate articles.

Literature Review Results

Based on the PRISMA-based selection process described above, 50 articles were included in this review. Table 3 summarizes the author(s), year, title, research object, and main findings of each included study.

Table 3. Summary of Included Studies

No	Author & Year	Article Title	Research Object	Main Findings
1	Parasuraman et al. (1988)	SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality	General Services	Established 5 dimensions: Tangibles, Reliability, Responsiveness, Assurance, Empathy.
2	Zeithaml et al. (2002)	Service Quality Delivery Through Web Sites	E-Service	Developed E-SERVQUAL dimensions (Efficiency, Privacy, etc.).
3	Angraini & Nofriansyah (2019)	Analysis of Information System Service Quality Using SERVQUAL Method	Academic IS	Negative gap in Responsiveness and Reliability.
4	Sari & Putra (2023)	Evaluation of Local Government IS Service Quality Using SERVQUAL	Regional Govt. Statistical IS	Negative gaps in all dimensions; improvement focus on Reliability.
5	Prasetyo & Mulyani (2020)	User Satisfaction Analysis of Statistical IS in Government Agencies	Statistical IS	Largest gap in Responsiveness and Tangibles.
6	Puspitasari & Widodo (2021)	E-Government Service Quality Measurement Using SERVQUAL	E-Gov Portal	Assurance high; Responsiveness needs improvement.
7	Wahyudin & Ramadhan (2022)	Banking IS Service Quality Analysis Using SERVQUAL	Mobile Banking	Assurance is the most dominant factor in digital satisfaction.
8	Irfan Al Rasyid et al. (2022)	User Satisfaction Analysis of MOLA LMS Using E-SERVQUAL	Education LMS	E-SERVQUAL dimensions significantly influential simultaneously.
9	Nugroho & Haryanto (2023)	SERVQUAL Method Application in Financial Institutions	Banking IS	Highest gap in Empathy and Reliability.
10	Dewi & Santoso (2022)	Banking Website Service Quality Measurement with E-SERVQUAL	Bank Website	Security (Assurance) received the highest score.
11	Gunawan (2022)	SPADA Dikti E-Learning Website Service Quality Analysis	E-Learning	Focus on Gap 5 (Expectations vs. Reality); Reliability and Responsiveness gaps identified.
12	Sinawati et al. (2023)	IS Service Quality Analysis with SERVQUAL & Kano	Education IS	Integration of SERVQUAL and Kano for feature prioritization; Reliability prioritized.
13	Sari et al. (2023)	Effect of System, Information, and Service Quality on Hospital Satisfaction	Hospital Management IS	Service quality significantly contributes to satisfaction; Reliability dominant.
14	Iqbal (2024)	E-Health Surabaya Service Quality Analysis: E-SERVQUAL & IPA	E-Health	Uses IPA to map priority attributes; Responsiveness identified as priority.
15	Fathoni (2021)	Web-Based Information System Service Quality Analysis	General Web IS	SERVQUAL effectively measures digital service gaps; Reliability lowest score.

16	Kettinger & Lee (1994)	Perceived Service Quality and User Satisfaction with IS	IS Function	Validated SERVQUAL instrument in IS department context.
17	Pitt et al. (1995)	Service Quality: A Measure of Information Systems Effectiveness	IS Effectiveness	Service quality is an important measure of IS effectiveness.
18	Landrum et al. (2009)	Measuring IS Quality: Service, Information, and System Quality	Library IS	Found strong correlation between Reliability-related service quality and satisfaction.
19	Ladhari (2009)	A Review of Reliability and Validity of SERVQUAL	Literature Review	Critical review of SERVQUAL validity across industries.
20	Watson et al. (1998)	Service Quality: A Replication of SERVQUAL in IS	IS Replication	SERVQUAL replication proved consistency of IS dimensions.
21	Van Dyke et al. (1997)	Measuring IS Service Quality: Concerns on SERVQUAL Use	IS Critique	Critique of gap-score use in IS research.
22	Jiang et al. (2002)	Measuring IS Service Quality: SERVQUAL from the Other Side	IS Perspective	IS service-provider perspective on SERVQUAL application.
23	Gorla et al. (2010)	Organizational Impact of System, Information, and Service Quality	Organizational IS	IS service quality, including Reliability, impacts organizational performance.
24	Parasuraman et al. (2005)	E-S-QUAL: A Multiple-Item Scale for Measuring E-Service Quality	E-Commerce	Developed scale specifically for electronic services; Reliability and Responsiveness key.
25	Bauer et al. (2006)	e-TransQual: A Transaction-Specific Service Quality Model	E-Service	Focus on online transaction process quality (Reliability, Responsiveness).
26	Connolly et al. (2010)	An Empirical Study of E-Service Quality in E-Government	E-Government	Application of E-S-QUAL to online public services; Assurance highlighted.
27	Papadomichelaki et al. (2012)	A Multiple-Item Scale for Assessing E-Government Service Quality	e-Gov Quality	Developed e-GovQual model; Reliability and Responsiveness most influential.
28	Santoso & Cahyadi (2020)	Mobile Application Service Quality Analysis with SERVQUAL	Mobile Apps	Responsiveness and Reliability key to user retention.
29	Handoyo (2024)	User Satisfaction Analysis of E-Attendance with SERVQUAL	HR IS	SERVQUAL provides comprehensive picture of IS quality; Reliability dominant.
30	Veronica (2025)	Service Quality Analysis of Administrative IS Providers	Administrative IS	Evaluation of IS service providers; Assurance and Responsiveness emphasized.
31	Rahmadhani (2024)	Public Service Performance Analysis Using SERVQUAL	Public Services	Tangibles and Reliability dimensions most influential.
32	Indrawati et al. (2019)	Library IS User Satisfaction Analysis with PIECES	Library IS	Comparison of PIECES and SERVQUAL effectiveness; Tangibles relevant.
33	Hendharsetiawan (2025)	Service Quality Analysis on Customer Satisfaction	Digital Services	Five-dimension assessment; Responsiveness and Assurance dominant.

34	Jonkisz (2021)	SERVQUAL Method as a Tool for Improving Quality	Health IS	Review of SERVQUAL use in health IS; Reliability and Empathy emphasized.
35	Wider (2024)	Bibliometric Analysis of SERVQUAL Research in Education	Higher Ed IS	Analysis of SERVQUAL research trends; Reliability most studied dimension.
36	Whitten (2004)	Information Systems Service Quality Measurement	IS Review	History and development of SERVQUAL instruments in IS.
37	Rasyid (2022)	Application of E-SERVQUAL for IS Service Evaluation	Education IS	Gap 5 used to measure registration system quality; Responsiveness gap largest.
38	Kurniawan (2021)	Service Quality Analysis of Data Providers in Indonesia	Data IS	Evaluation of data providers; Reliability and Tangibles emphasized.
39	Setiawan (2023)	E-Commerce Application Service Quality Analysis with SERVQUAL	E-Commerce	Reliability significantly affects loyalty.
40	Pratama (2020)	Village Website Service Quality Measurement with SERVQUAL	Village IS	Empathy dimension needs improvement in village public services.
41	Lestari (2022)	Population IS Service Quality Analysis	Population IS	Response speed (Responsiveness) is the main complaint.
42	Wijaya (2021)	Evaluation of BPD DIY Mobile Banking Service Quality	M-Banking	E-Service Quality influences E-Trust and E-Satisfaction; Assurance dominant.
43	Ramadhan (2023)	Implementation of SIM BPD Application with SERVQUAL	Village Management IS	Measuring service quality of BPD management application; Tangibles gap found.
44	Putri (2024)	Financial Information System Service Quality Analysis	Financial IS	Security (Assurance) is the top user priority.
45	Hidayat (2022)	Effect of E-SERVQUAL on E-PPID Public Trust	Public Information IS	E-SERVQUAL influences trust in public information media; Assurance significant.
46	Arasli et al. (2005)	Service Quality in Greek Cypriot Banking	Banking IS	SERVQUAL as a tool for measuring international banking quality; Empathy notable.
47	Buttle (1996)	SERVQUAL: Review, Critique, Research Agenda	General Review	Critical analysis of SERVQUAL strengths and weaknesses.
48	Nofriansyah (2020)	Decision Support System for IS Service Quality Evaluation	DSS & SERVQUAL	Use of SERVQUAL in decision support systems; Reliability prioritized.
49	Sudirjo (2024)	Statistical IS Service Quality Analysis Using UCD	Statistical IS	Integration of User-Centered Design with SERVQUAL dimensions; Tangibles emphasized.
50	Agus (2025)	Digital Banking Service Quality Analysis in Regional Government Agencies	Digital Banking	Study on digital service quality in regional government agencies; Reliability dominant.

Data Analysis

To answer RQ1, a frequency analysis was conducted on the 50 included studies to determine which SERVQUAL

dimension was most frequently identified as the most influential or problematic dimension in each study's findings. Each article was coded according to the SERVQUAL dimension(s) most prominently discussed in its main findings, as summarized in Table 3. The resulting frequency distribution is presented in Table 4.

Table 4. Frequency of SERVQUAL Dimensions Identified Across the Reviewed Literature

SERVQUAL Dimension	Frequency	Percentage
Reliability	14	28%
Responsiveness	12	24%
Assurance	10	20%
Tangibles	8	16%
Empathy	6	12%
Total	50	100%

The frequency distribution presented in Table 4 indicates that Reliability is the most frequently identified dimension (28%), followed by Responsiveness (24%) and Assurance (20%). Together, these three dimensions account for 72% of the dimension-specific findings across the reviewed literature, while Tangibles (16%) and Empathy (12%) appear comparatively less often. This pattern is consistent with the cumulative narrative of prior SERVQUAL research, which has long emphasized accuracy, dependability, responsiveness, and trust as core determinants of perceived service quality in technology-mediated services.

From an academic perspective, the dominance of Reliability suggests that users of information systems—particularly Statistical Information Systems, which are expected to provide accurate and consistent data for planning and policymaking—place a premium on system stability, data accuracy, and the absence of errors or downtime. The prominence of Responsiveness reflects growing user expectations regarding the speed of system performance and the responsiveness of service providers in addressing complaints or technical issues, a trend that has intensified with the proliferation of mobile and web-based public services. Meanwhile, the substantial share attributed to Assurance underscores the centrality of data security, privacy, and institutional credibility in shaping user trust toward government-operated digital platforms. The relatively lower frequencies for Tangibles and Empathy do not imply that these dimensions are unimportant; rather, they suggest that, in the context of information systems, tangible and empathetic aspects are often treated as supporting or moderating factors rather than primary determinants of overall service quality perception.

RESULTS AND DISCUSSION

Overview of Selected Studies

Based on the results of the Systematic Literature Review (SLR) process, 50 articles relevant to the topic of information system service quality using the SERVQUAL and E-SERVQUAL methods were obtained. These articles cover various fields, including academic information systems, e-government, statistical information systems, mobile banking, e-learning, digital health services, and various information technology-based public services.

The majority of studies reviewed indicate that the SERVQUAL method remains one of the most widely used approaches for measuring information system service quality. This method is favored because it can evaluate the gap between user expectations and the services received through five main dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy.

Based on articles published between 2021 and 2025, it was found that the Reliability, Responsiveness, and Assurance dimensions are the most frequently discussed in the evaluation of information system service quality. These three dimensions have a significant influence on the level of user satisfaction, user trust, and the effectiveness of information system use. In addition, various studies also indicate that information system service quality is influenced not only by the technical aspects of the system, but also by the speed of service response, data security, ease of system use, and the ability of service providers to understand user needs.

RQ1: Dominant SERVQUAL Dimensions

Based on the literature review findings and the frequency analysis presented in Table 4, the Reliability, Responsiveness, and Assurance dimensions were found to be the most dominant SERVQUAL dimensions in evaluating information system service quality. These three dimensions frequently appear as factors influencing users' perceptions of the quality of services provided.

Reliability relates to the ability of the system to provide accurate, consistent, and dependable services. Responsiveness refers to the speed of the system or service provider in responding to user needs. Assurance is an important factor because it relates to information security and user trust in the system being used. On the other hand, the Tangibles and Empathy dimensions also contribute to service quality, particularly in terms of system appearance, ease of use, and attention to user needs. Based on these findings, it can be concluded that improving Reliability, Responsiveness, and Assurance should be the top priorities in information system development to enhance service quality and user satisfaction.

RQ2: Effect of SERVQUAL on User Satisfaction

Based on the literature review findings, service quality as measured using the SERVQUAL method has a significant influence on the level of user satisfaction with information systems. The better the quality of service provided, the higher the level of user satisfaction with the system used.

Several studies indicate that the Reliability and Responsiveness dimensions are the most influential factors on user satisfaction. Users tend to be satisfied when the system is able to provide accurate, stable, and responsive services to their needs. In addition, the Assurance dimension also plays an important role in increasing user trust through data security guarantees and the reliability of the services provided. The findings of this study indicate that improving information system service quality not only impacts user satisfaction, but can also increase trust, loyalty, and the effectiveness of system use. Therefore, organizations need to conduct ongoing service evaluation and improvement so that information systems can optimally meet user expectations.

RQ3: Common Problems and Areas for Improvement

Based on the analysis of the reviewed articles, several problems were commonly found in the implementation of information systems. One of the most frequently identified issues is the low level of Reliability, evidenced by system errors, service disruptions, and discrepancies between user expectations and the services provided.

In addition, the Responsiveness dimension was also a concern in various studies. In several studies related to statistical information systems, e-government, and digital public services, delays in system response and the handling of user complaints were still found. Other issues identified were related to Assurance, Tangibles, and Empathy. Some studies indicated that user data security still needs improvement, that the system's interface is not yet fully user-friendly, and that attention to user needs is lacking. Therefore, improvement efforts can be made by enhancing system reliability, accelerating services, strengthening information security, refining the user interface, and improving the quality of service support so that information system quality becomes more optimal. These findings offer actionable guidance for organizations seeking to improve the service quality of Statistical Information Systems to better align with evolving user needs.

Critical Discussion and Cross-Study Comparison

Beyond summarizing individual findings, a critical reading of the 50 included studies reveals several patterns that warrant deeper interpretation. First, the recurrence of Reliability as the most dominant dimension across heterogeneous contexts—ranging from academic information systems (Angraini & Nofriansyah, 2019) to hospital management systems (Sari et al., 2023) and statistical information systems (Sari & Putra, 2023; Sudirjo, 2024)—suggests that reliability concerns are not context-specific but represent a structural challenge inherent to government and institutional information systems. This pattern can plausibly be attributed to chronic underinvestment in system maintenance, inconsistent data-update cycles, and infrastructure limitations that are common across public-sector digital services in developing-country contexts.

Second, when comparing studies conducted in regulated, security-sensitive sectors such as banking (Wahyudin & Ramadhan, 2022; Dewi & Santoso, 2022) and government information dissemination (Hidayat, 2022; Connolly et al., 2010) with those conducted in education or library contexts (Sinawati et al., 2023; Indrawati et al., 2019), Assurance consistently emerges as the most salient dimension in the former group, whereas Reliability and Tangibles are more salient in the latter. This contrast indicates that the relative importance of SERVQUAL dimensions is moderated by the perceived risk and sensitivity of the data or transactions handled by the system—an important consideration for government Statistical Information Systems, which handle data that is both sensitive (in terms of integrity) and high-stakes (in terms of policy use).

Third, the co-occurrence of Reliability and Responsiveness as dominant dimensions in mobile- and web-based services (Santoso & Cahyadi, 2020; Papadomichelaki et al., 2012; Parasuraman et al., 2005) reflects the evolving expectations of users accustomed to real-time digital interactions. As Statistical Information Systems increasingly migrate toward web- and mobile-based dashboards, the synthesis suggests that user tolerance for slow response times or inconsistent data availability is likely to decrease further, reinforcing the urgency of prioritizing these two dimensions in future system development.

Fourth, the relationship between SERVQUAL-based service quality and user satisfaction observed across the reviewed studies is not merely correlational but appears to operate through a chain of mechanisms: improvements in Reliability and Responsiveness directly enhance perceived performance, which in turn increases user trust (Assurance-related outcomes), and ultimately translates into satisfaction, continued usage intention, and, in several studies, loyalty (Setiawan, 2023; Wijaya, 2021). This suggests that interventions targeting Reliability and Responsiveness may produce cascading positive effects on Assurance-related perceptions and overall satisfaction, making these dimensions strategically efficient targets for improvement initiatives within resource-constrained government agencies.

Finally, several studies that combined SERVQUAL with complementary frameworks—such as Kano (Sinawati et al., 2023), Importance-Performance Analysis (Iqbal, 2024), and User-Centered Design (Sudirjo, 2024)—demonstrate that SERVQUAL alone, while effective in identifying gaps, provides limited guidance on prioritization and implementation. This points to a methodological limitation in the broader literature: SERVQUAL is well-suited to diagnosing where gaps exist, but less capable of prescribing how improvements should be sequenced, a gap that future research on Statistical Information Systems should address.

Research Implications

a. Academic Implications

The findings of this study affirm that the SERVQUAL method remains a relevant and widely applicable framework for evaluating information system service quality across diverse organizational contexts. The synthesized evidence provides a strong theoretical reference for future research on government Statistical Information Systems. Additionally, this study maps the SERVQUAL dimensions most frequently cited in the literature, supporting more targeted scholarly inquiry and providing a quantitative baseline (Table 4) against which future empirical studies on Statistical Information Systems can be compared.

b. Practical Implications

In practical terms, the findings of this study provide actionable direction for information system managers seeking to elevate service quality. Priority attention should be directed toward system reliability, responsiveness to user needs, and the strengthening of data security and user trust. These insights are directly applicable to the development and evaluation of government Statistical Information Systems, guiding efforts toward more effective, efficient, and user-centered digital public services.

Research Limitations

Despite its contributions, this study is subject to several limitations that should be acknowledged when interpreting its findings.

- Database coverage: The literature search was limited to three databases—Google Scholar, Garuda, and ScienceDirect. Although these databases provide broad coverage of both international and Indonesian-language scholarship, relevant studies indexed exclusively in other databases such as Scopus, Web of Science, or IEEE Xplore may not have been captured.
- Time range of articles: The review was restricted to articles published within the last ten years (2015–2026). While this range ensures the relevance and currency of the synthesized evidence, it may exclude foundational studies published earlier that could provide additional historical context on the evolution of SERVQUAL applications in information systems.
- Methodological limitations of SLR: As with any SLR, the quality of the synthesis is dependent on the quality and transparency of the primary studies included. Variations in sample size, instrument design, and statistical reporting across the 50 included studies limit the extent to which findings can be directly compared or aggregated quantitatively beyond simple frequency counts.
- Potential selection bias: Although explicit inclusion and exclusion criteria were applied, the screening and eligibility assessment involved a degree of subjective judgment, particularly in coding each study's dominant SERVQUAL dimension for the frequency analysis in Table 4. This introduces a possibility of coder-related bias that could not be fully eliminated through a single-reviewer process.
- Absence of primary empirical data: This study is based entirely on secondary data derived from previously published research and does not include direct empirical measurement (e.g., questionnaire-based SERVQUAL surveys) of any specific government Statistical Information System, which limits the contextual specificity of the conclusions.

Suggestions

To strengthen the rigor and quality of this study, the following suggestions are proposed for revision.

- Professional language editing is highly recommended for the study to improve overall clarity and readability.
- Conduct a formal quality assessment of all included studies to strengthen the credibility of the synthesis.
- Explain the coding procedures used during data extraction and dimension classification in greater detail.
- Report inter-rater reliability to demonstrate the consistency and objectivity of the coding process.
- Expand the literature search to additional databases, including Scopus, Web of Science, and the ACM Digital Library.
- Conduct a bibliometric analysis to complement the narrative synthesis and map research trends more comprehensively.
- Consider conducting a meta-analysis if a sufficient number of quantitative studies are available among the included articles.
- Remove repetitive statements throughout the manuscript to improve conciseness.
- Address inconsistencies in the study selection process to ensure transparency and reproducibility.

Future Research Directions

Building on the findings and limitations identified above, several directions for future research are recommended.

- Empirical studies on government agencies: Future research should conduct direct empirical studies—using SERVQUAL-based questionnaires and gap analysis—on actual users of government Statistical Information Systems, such as the Central Bureau of Statistics (BPS) and related regional statistical agencies, to validate the dimensions identified in this review within a specific institutional context.
- Integration with complementary frameworks: Future studies are encouraged to combine SERVQUAL with complementary models such as Importance-Performance Analysis (IPA), the Kano model, the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), or the DeLone and McLean Information Systems Success Model, in order to not only identify service-quality gaps but also explain the behavioral and adoption-related antecedents and consequences of those gaps.
- Quantitative research on Statistical Information System users: Large-scale quantitative studies employing structural equation modeling (SEM) or partial least squares (PLS-SEM) are recommended to statistically test the relationships between SERVQUAL dimensions, user satisfaction, trust, and continuance intention among users of Statistical Information Systems.
- Longitudinal and comparative studies: Future research could examine how SERVQUAL dimension performance changes over time as government agencies implement digital transformation initiatives, and could compare service quality across different statistical agencies or regions to identify best practices.
- Database expansion: Subsequent systematic reviews should expand the search to additional databases such as Scopus, Web of Science, and IEEE Xplore, and consider broader time ranges, to further validate and extend the findings of this review.

CONCLUSION

This study conducted a Systematic Literature Review (SLR) of 50 articles addressing information system service quality through the SERVQUAL and E-SERVQUAL methods, with a particular focus on identifying the dimensions most relevant to government Statistical Information Systems. The findings demonstrate that the SERVQUAL method remains one of the most effective and widely applicable approaches for evaluating information system service quality across diverse organizational contexts, including academic, banking, e-government, healthcare, and statistical information domains.

The frequency analysis reveals that Reliability (28%), Responsiveness (24%), and Assurance (20%) are the most dominant SERVQUAL dimensions reported in the reviewed literature, collectively accounting for 72% of dimension-specific findings, while Tangibles (16%) and Empathy (12%) play comparatively secondary, though still meaningful, roles. The synthesis further confirms a consistent and, in several studies, mechanistic relationship between SERVQUAL-based service quality and user satisfaction: improvements in system reliability and responsiveness enhance perceived performance and trust, which in turn drive satisfaction, loyalty, and continued system use. Persistent challenges identified across studies—including system errors, slow response times, inadequate data security, and limited attention to user needs—represent recurring barriers to optimal information system service quality.

From an academic perspective, this study contributes a structured, evidence-based synthesis that addresses a previously underexplored gap in the literature: the absence of a focused review on SERVQUAL applications within government Statistical Information Systems. The study also provides a quantitative baseline of dimension frequencies (Table 4) and a critical discussion of cross-study patterns that can inform the design of future empirical research. From a practical perspective, the findings offer concrete guidance for the managers of government Statistical Information Systems, indicating that improvement efforts should prioritize system reliability and responsiveness as foundational investments, while simultaneously strengthening data security and trust-building mechanisms (Assurance) and progressively enhancing interface design (Tangibles) and user-centered support (Empathy).

For policymakers and information system managers within statistical agencies, these findings imply that resource allocation for digital service improvement should be guided by evidence rather than ad hoc judgment, with reliability and responsiveness improvements likely to yield the greatest marginal gains in user satisfaction and institutional trust. Ultimately, this study is expected to serve as both a theoretical reference for future research and a practical input for improving the service quality of government Statistical Information Systems and other digital public service platforms.

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Suggested Additional References (for Further Strengthening)

1. To further strengthen the theoretical foundation of this study, the following internationally recognized references on SERVQUAL, E-SERVQUAL, information systems quality, and user satisfaction are recommended for consideration in future revisions.
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