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# Dimensions of Information System (IS) Influencing User Satisfaction: A Systematic Review

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**Abstract**

User satisfaction has often been used to measure IS success; it depends on system quality and the organization. This systematic review discussed the dimensions influencing user satisfaction with IS and covered system quality, users' characteristics, and organizational and context factors. A literature review was performed to select papers from the Web of Science and SCOPUS, and 14 articles were included in the review. These criteria were followed in line with the PRISMA guidelines that guide the process. The study shows that system reliability, user adaptability, management support, and industry and technological environment impact IS satisfaction. The review findings suggest that organizations must enhance system quality and involve end users in critical IS decisions while matching systems to industrial demands and evaluating technological progress to achieve better IS satisfaction.

**Keywords:** Information System. User Satisfaction, PRISMA, Organizational Influence, Contextual Factors

## Introduction

User satisfaction is the primary measure determining the success of Information Systems (IS) in today's global environment. IS discipline experts have consistently identified IS implementation success evaluation as one of their key persistent concerns (1). Studies employ various metrics to investigate IS success, including system usage measurement, user satisfaction ratings, IS performance inspection, and IS efficiency evaluation. The widespread usage of user satisfaction marks it as the primary isolated measure to assess IS success (2-4).

IS users' satisfaction levels are one of the main measurements used to determine the success of ISs, but they can overshadow other measurements, such as IS usage (5). According to DeLone and McLean (1992), user satisfaction is vital in IS study for three main reasons: First, it is easy to accept it as a valid measure because it has a high face validity; second, numerous instruments can be used for assessing user satisfaction; and third, it can be considered to be a stronger and more tangible measure for assessing IS success as compared to other potentially conceptually less sound or less easily measurable variables (6, 7).

Tarkhanov et al. (2020) have mentioned in their study that the use of IS has received notable attention from the study community as it is considered theoretically, empirically, and practically meaningful in the IS body of knowledge. Consequently, IS effectiveness is a core component of all IS models since the definitions of IS deal with effective and ineffective IS (8). In IS implementation study, IS effectiveness is usually considered the final dependent variable. In practice, practitioners are constantly interested in evaluating the effectiveness of organizational IS (9). This concern is interrelated with the issue of user satisfaction since effective IS fulfills the users' needs and improves the users' experience. User satisfaction is another benchmark indicator of IS effectiveness, which shows the degree to which the system meets its intended objectives and user expectations (10).

The evaluation of IS effectiveness is widely understood as the extent to which a particular IS supports accomplishing organizational goals and, therefore, affects organizational performance. However, IS studies do not agree on the definition of IS effectiveness and how it should be measured (11). This is not a novelty to wellness but closely resembles the problems associated with measuring organizational effectiveness. In addition, it is unfeasible to look for a single key or set of keys to address the issue of IS effectiveness across the organization. It was also found that the criteria used to assess the effectiveness of IS within

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a specific organization can be dissimilar due to changing stakeholder value systems, varying organizational tiers, and stages of development of the organization (12).

One of the most desirable ways of assessing IS is through the neutral approach, which can include a cost-benefit analysis to establish the value of the system cost by reducing organizational ineffectiveness. However, measuring these costs and benefits, mainly the benefits they provide, is comparatively complex. The measures obtained from the objective data may not be directly measurable, and thus, studies use indicators, which are substitute measures (13). Furthermore, another popular proxy is system utilization, which indicates the extent of confidence users have in the system's utility. Nevertheless, usage and effectiveness are not directly proportional because of factors such as compulsory usage or dissatisfaction despite utilization (14). Hence, many perceptual variables, such as user satisfaction, have become the leading surrogates for the overall success of IS. These measures provide a more usable and feasible perspective to establish how an IS meets users' needs and aligns with organizational goals (15).

According to prior study analyses, User satisfaction is an identifiable metric for assessing IS success. User satisfaction is an effective instrument for determining the extent to which systems fulfill user needs because it applies at general and specific levels (3, 16, 17). User satisfaction evaluations can be modified through this adaptable measurement method to meet different operational needs during system assessments and performance monitoring activities. Organizations that focus on user satisfaction succeed in linking their IS strategies to user needs, resulting in higher system adoption rates and better organizational performance (18).

User satisfaction has been a prominent focus of previous studies to identify IS success factors in various settings. However, there is a need to tie together the current research on how IS affects user satisfaction comprehensively. Although previous studies have proposed a set of constructs that include information quality, system quality, and service quality as affecting the users' satisfaction, there is a lack of systematic synthesis of these findings grounded on studies on IS effectiveness and organization performance (19-21). On the same note, the dynamism of the organizational environments and the changes in the role of IS in fitting the user's ever-changing needs also underlined the need for more study in this field.

This systematic review is important because it synthesizes IS and user satisfaction while outlining the factors that make IS successful. The rationale for conducting this review arises from the motivation to periodically assess how adequate IS design is for serving user needs by using user satisfaction to determine system success. It contributed by reviewing the literature, presenting a model of user satisfaction, and offering practical suggestions for applying IS study to increase the adoption and value of ISs in organizations.

## Methodology

### *Search Strategy*

The search strategy focused on determining the studies on the effects of IS on the user's satisfaction level, applying wider search terms and keywords. The studies were searched using the Web of Science, Scopus, ProQuest, ScienceDirect, Taylor & Francis Online, and Google Scholar databases from 2015 to 2024. Covidence software was used to extract, filter, and perform initial appraisals of the data. The major keywords used in the study were 'User satisfaction and Information Systems,' 'IS success and effectiveness,' 'Information Systems performance,' 'IS user experience evaluation,' 'System quality and user satisfaction,' 'Service quality in IS,' and 'IS implementation success.' Following the PRISMA guidelines for systematic reviews, six study committee members screened all records.

| S. No. | Search Strategy |
|---|---|
| 1. | ("User Satisfaction and Information Systems") OR ("User satisfaction in IS implementation") AND ("IS success and effectiveness") |
| 2. | ("Information Systems performance") OR ("Performance evaluation in IS") AND ("IS implementation success") |
| 3. | ("System quality and user satisfaction") AND ("Information Systems quality") OR ("System performance and user experience") |

| | |
|---|---|
| 5. | ("IS user experience evaluation") AND ("IS usability") OR ("User feedback in IS") OR ("IS effectiveness and user feedback") |

*Table 1: Search Keywords to Identify Relevant Studies*

### *Exclusion and Inclusion Criteria*

| Inclusion Criteria | Exclusion Criteria |
|---|---|
| • Reports, books, articles, and all study methodologies published in English have been included. | Papers and articles written in any language other than the English language. |
| • Studies on the impact of IS on user satisfaction, in terms of system quality, service quality, and user experience, have been included | Studies papers that do not have elements of interaction or no concern with IS and user satisfaction and those that involve unrelated factors have been excluded. |

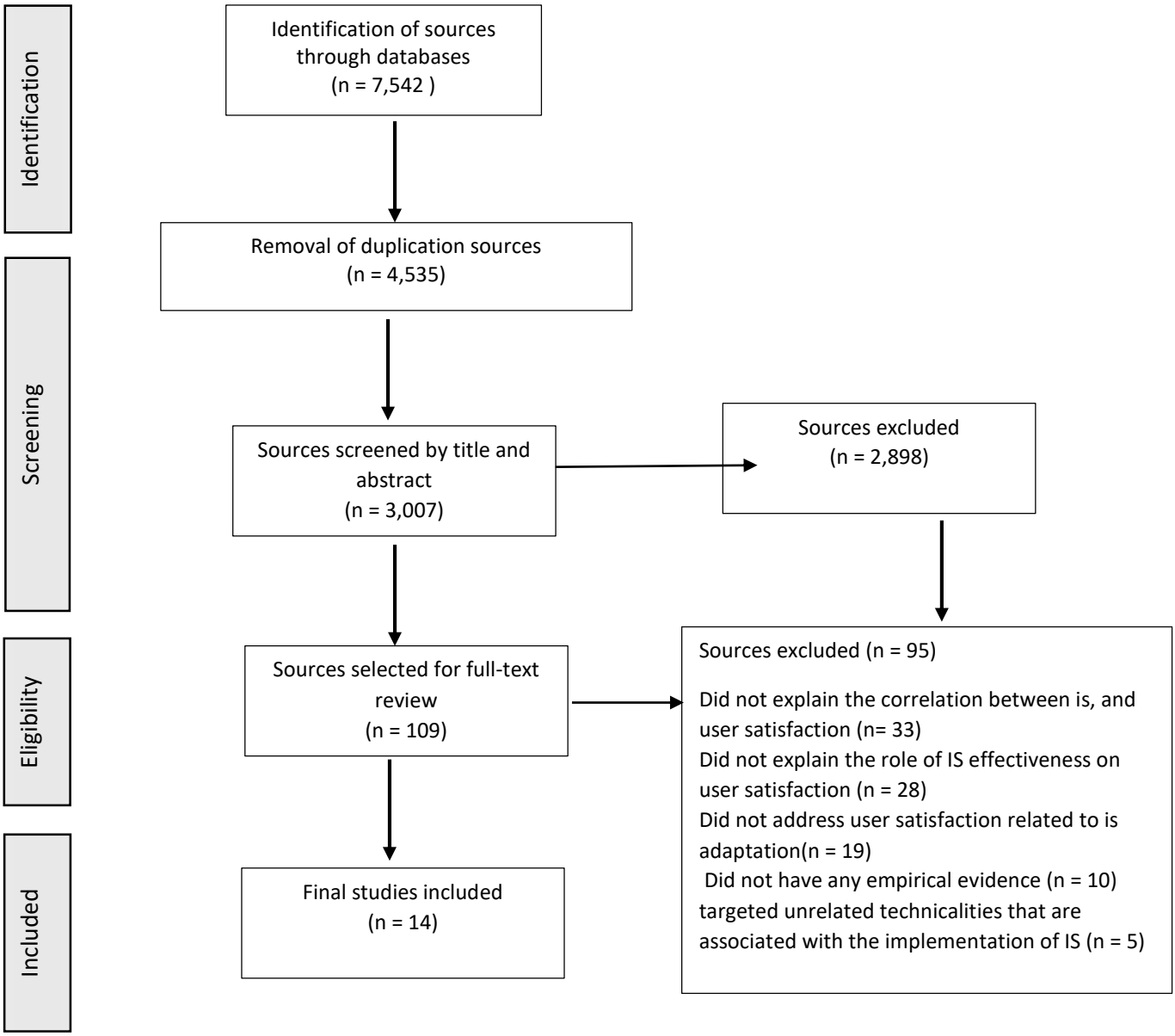
*Table 2: Inclusion and Exclusion Criteria*

All the documents underwent some form of analysis by at least two evaluators. All the selected articles, papers, and books for this systematic review were comprehensively and rigorously evaluated by this systematic review study, and the other review specialized in IS studies to ensure its credibility. In regular meetings, all the reviewers, including the key studies, reviewed and contrasted two to five articles to comprehend elements of the study, including objectives, contents, methods, theories, and outcomes.

### *Study Selection Process*

Screening or study selection involves assessing documents retrieved in the search process to decide whether they should be included in the review (22). By employing this approach, the study identified 7,542 sources from the databases. Among them, 4535 initially identified were excluded due to being duplicates, while 3,007 studies were deemed relevant and included in the analysis based on the title and abstract. The remaining 3,007 articles were further evaluated, and 2,898 were removed due to the difference in the study objective and quality issues. Of these, 109 full-text articles considered most relevant to the inquiry of IS influence on user satisfaction were chosen. Based on the evaluation of academics specializing in IS effectiveness and user satisfaction, 95 items were excluded. Finally, the authors finalized 14 articles that were most relevant to this systematic review.

*Figure 1: Study Selection Process*




***Review Analysis Process***

The systematic review approach followed in this paper is that of Dixon Woods et al., Jesson et al., and Butler-Henderson et al. (23-25). These approaches make it an indicative approach that focuses on defining the relevant literature and reviewing the most important contributions to the field rather than the methodological quality of the resultant studies. It also offers a critical explanatory approach to the evidence collected.

***Study Reflexivity***

The study executed personal and methodological reflexivity across its entire study period. When choosing the search terms and analyzing the records, the studies included an awareness of their personal and shared background to avoid prejudice and complete preconception checks before proceeding to further stages. A multidimensional team of individuals has been formed who brought different perspectives, which helped bring diverse perspectives to this study. A constructive approach was utilized to help avoid the assumption of being closer to the true conceptualization of IS and user satisfaction,

which devoted attention to analyzing evidence carefully and rigorously.

**Results**

Four thousand five hundred thirty-five sources were found, excluding duplicate sources. Of these, 109 were included for full-text analysis, and 14 were considered the most relevant to this systematic review. The results were discussed considering the IS dimensions that cause user satisfaction. These include system and information quality, user characteristics, organizational influence, and contextual factors. The review examined how these factors influence IS success and user satisfaction. The studies utilized to analyze the following dimensions are mentioned in Table 3.

***User Satisfaction Dimension***

*System and Information Quality*

System and information quality are essential for determining IS effectiveness and its impact on user satisfaction. The operational features of IS, such as reliability, flexibility, ease of use, and performance, compose system quality, which directly affects user satisfaction and system effectiveness. Al-Okaily et al. (2020) mentioned that users who operate within highly quality systems achieve efficient yet productive outcomes when handling tasks and making decisions (26). Furthermore, Information quality represents fundamental data traits that emerge from IS production, such as accuracy, completeness, relevance, and timeliness (27).

System users trust IS when they provide quality data and rely on it to make informed decisions. Study findings demonstrate that system quality alongside information quality independently controls user satisfaction and organizational performance. As the Victory & Bahari (2024) literature points out, these two aspects are interrelated. For instance, a systematic review of the current literature yielded essential factors that impacted information quality and demonstrated a symbiotic interaction between information quality and system quality (28).

The literature also revealed that higher-quality systems and information improve user satisfaction and the organization's overall performance. In their study on the Tax Consultant Information System Application (SIKOP), Suhendro et al. (2024) explained that the efficiency of licensing services improved and benefited from the completed enhanced system. Hence, the users' satisfaction rate rose considerably. However, areas that might require attention and formulation to improve the system's effectiveness were identified, including procedural clarity and personal interaction (29).

*User Characteristics*

User characteristics are important in determining the user's behavior about IS and their satisfaction level with the system. A prior study has supported the idea that various user demographic variables, including previous experience, technical proficiencies, and firsthand knowledge of the system, can impact the satisfaction level (27). Bano and Zowghi (2015), in their systematic review of the topic, find out that end-users who use an IS more frequently with reduced error rates are likely to express a high level of satisfaction because of their ability to work comfortably with the interfaces and solve problems. The literature review indicated that, although user involvement contributes positively towards achieving systems' success, if not well managed, it becomes the source of more harm than good (30).

Furthermore, the match between the user's expectation and the perceived benefit of the IS influences satisfaction. When attempting to measure satisfaction, it has also been noted that users who feel that an IS meets their needs and contributes positively to their work will exhibit the above test characteristics of satisfaction (31). Also, perceived usefulness was determined to mediate the relationship between quality factors and user satisfaction, as supported by the current work of Salim et al. (2021), which regards perceived usefulness as significant in enhancing the system effectiveness and user satisfaction. This study has provided a good framework for improving IS at the University of Bengkulu. (32).

According to Sebetci (2018), the Turkye Health Information System (HIS) showed that user adaptability significantly affects satisfaction with Information Systems. A positive workplace attitude toward new technologies and organizational changes among users leads to better system perception because these users accept learning curves better. Developers who appreciate functional enhancements in new systems demonstrate elevated use rates while maintaining greater loyalty since they adopt new systems enthusiastically. System designers must account for users' adaptability, experience, and system-related expectations to boost satisfaction ratings that drive system effectiveness (33).

*Organizational Influence*

Organizational influence is a key indicator that determines the effectiveness of IS in enhancing user satisfaction. Determining how users engage with IS is critical in understanding how management's structure and culture impact satisfaction levels (34). Bano et al. (2017) determined that high user involvement and management support increase organizational satisfaction with IS. In this longitudinal case study, user satisfaction was defined as a key factor for system success even when the schedule or the budget had not been achieved; the satisfaction changes over the various phases of development, showing the value of effective management techniques and user presence to preserve satisfaction (35).

Kim et al. (2018) established that the decision-making administration regarding upgrades to IS influences satisfaction. The study identifies the primary actors in IS upgrades and the relationships between them, users, managers, and experts in the organizational context of the decision-making processes. According to the study, delegating decision-making authority to users gives them confidence in the system as they participate in development and usage decisions. On the other hand, centralizing these decisions can reduce user interactivity, resulting in high user dissatisfaction when their needs and feedback are not considered. Synchronizing decisions with user input is essential in increasing IS satisfaction (36).

As per Sartika et al. (2016), Culture plays a significant role in determining user satisfaction with IS within an organization. Promoting an organizational culture that fosters innovation, learning, and receptiveness to change will lead to higher satisfaction since the users are receptive to change in new systems and have feedback to offer. However, mechanical collectivistic cultures with overemphasized status differences and low tolerance to change decrease satisfaction because of low incorporation and empowerment. IS satisfaction can only be optimized when effort is placed in user involvement and capturing organizational flexibility (34). Furthermore, User satisfaction can be improved by properly aligning organizational objectives with IS objectives. Cho et al. (2015) have noted that when users can observe how IS serves the goals of an organization, their satisfaction is bound to rise (Solano et al., 2014). Improving the conversations around the program and providing staff with proper training can increase 'buy-in.' Employees who have supported management and aligned organizational goals will enhance IS users' satisfaction (37).

*Contextual Factors*

User satisfaction with IS depends on contextual characteristics of the external environment and specific characteristics of the industry. Technological factors, legal forces, and market forces affect how the users engage with and appreciate the value of an IS. For instance, the laws governing institutions such as health or banking require specific systems to be developed, affecting the users' satisfaction level (38). Jakhar and Kumar (2020) utilized an analytic hierarchical process approach. He analyzed that employees expect their IS to meet compliance needs and facilitate the execution of complicated business tasks, which boosts satisfaction when the IS meets these expectations. Besides, general factors like the size and the field of the organization also contribute to the further shaping of how users determine the effectiveness of IS. The use of IS may vary for large organizations in various aspects because organizations of small size may not experience the level of complexity faced by large organizations in their operation (39).

Another significant condition is the geographic location of the organization. Organizational infrastructure, technological resource availability, and adopting culture determine how users view a particular IS. This is because, in developed technological systems, users have high expectations concerning the performance and dependability of the systems they use. On the other hand, in areas with restricted resources or poor information and communication technology infrastructure, overall end-user satisfaction might be driven by the system's appropriateness regarding the available resources rather than the implementation of advanced features (10). As such, IS design and implementation must incorporate regional differences to increase user satisfaction.

| Author Names | Type | Year | Aim |
|---|---|---|---|
| 1) Al-Okaily et al. | Quantitative Analysis | 2020 | To examine how the factors of AIS success or effectiveness, which include system quality, information quality, service quality, and training quality, affect the organizational benefits. |

| | | | |
|---|---|---|---|
| 2) Zatsarinnyy & Ionenkov | Review | 2021 | To determine the general steps for choosing the efficiency indicators of IS and offer lists of indicators and methods of their calculations depending on the type of IS. |
| 3) Victory & Bahari | Systematic Review | 2024 | To examine articles, books, and other sources published in international databases and journals on information security audits in Indonesia from 2004 to 2024 and pinpoint key subjects and study gaps generically. |
| 4) Suhendro et al | Qualitative Analysis | 2024 | To assess the status and challenges of the Tax Consultant Licensing Services delivered by the Ministry of Finance through the Tax Consultant Information System Application (SIKOP) regarding the efficiency and accessibility of public services. |
| 5) Bano & Zowghi | Systematic Review | 2015 | to systematically review all the empirical literature to establish the relationship between involvement and system success (UI-SS) relationship |
| 6) Vaezi et al. | Literature Review | 2016 | To explore the literature on IS user satisfaction to establish what it is, how it has developed over time, and its antecedents and consequences, and to offer suggestions for future study. |
| 7) Salim et al. | Qualitative Analysis | 2021 | To evaluate one of the most important variables cited in the “Technology Acceptance Model” by Davis, namely perceived usefulness, as a moderator to the “DeLone and McLean” success model in the context of an educational portal in Higher Education |
| 8) Sebetci | Qualitative Analysis | 2018 | to build and validate a new user satisfaction model for HIS that would adopt technology compatibility as a part of the EUCS model. |
| 9) Sartika et al | Qualitative Analysis | 2016 | To test the mediation impact of cultural variables on organizations, competence, and quality of IS to final users’ satisfaction. |
| 10) Bano et al. | Longitudinal Case Study | 2017 | To examine how user satisfaction fits in the overall framework of the user involvement and system success perspective. |
| 11) Kim et al. | Interpretive Structural Modeling (ISM) | 2018 | To determine key attributes that may affect decisions over IS upgrades, especially the relationships between the users, the managers, and the experts, by applying the ISM methodology. |
| 12) Cho et al | Quantitative Analysis | 2015 | To assess the effectiveness of the newly established IS deployed on July 1, 2014 at three public health facilities in Korea. |
| 13) Ghasemaghaei & Hassanein, | Meta-Analysis | 2015 | This study compares the contextual moderators, including the webpage type, sample characteristics, and the different information quality (IQ) categories, on the relationship between perceived online information quality and consumer satisfaction in the online environment. |

| | | | |
|---|---|---|---|
| 14) Jakhar & Kumar | Qualitative Analysis | 2020 | This study uses a multi-criteria decision-making (MCDM) technique to study the impact of contextual factors, namely, organization size, type of IS, functional area, and managerial level, on the user perception of two factors, information quality (IQ) and interface usability (IU). |

***Table 3: Studies utilized in Analyzing User's Dimensions***

**Discussion**

The systematic review of user satisfaction with IS indicated that several IS factors impact the user satisfaction level. These factors are, therefore, grouped into four broad dimensions: system and information quality, user aspects, organizational characteristics, and environment. Realizing these dimensions and their implications for user satisfaction is useful for enhancing IS and its performance. The systematic review determined that system and information quality are essential for user satisfaction assessment. The user perception of a system increases when reliability, flexibility, ease of use, and system performance are improved (10). Similarly, the information's accuracy, inclusiveness, and relevance increase users' trust and reliance on the system (29). Available studies show that the positive correlation between system quality and information quality increases user satisfaction and organizational performance (40-42). According to Salim et al. (2021), factors related to users, including their experience level, technical ability, and capacity to adapt to new changes, directly influence USER satisfaction (32). The systematic review shows that users who possess high skill levels and technological proficiency and adapt well to systems display higher levels of satisfaction toward IS while demonstrating satisfaction mainly when technology improves work practice efficiency (5, 43, 44).

Organizational influence plays a highly important role in IS satisfaction and involves chief management support and user involvement as the adoption agents. The literature reviews demonstrated that client involvement and support help increase satisfaction regardless of goals such as budget or time in a project that has not been reached (45). Past studies coted that empowering users with decision-making authority to make specific choices increases their confidence in the system. Also, an environment that fosters innovation, learning, teamwork, and change yields high satisfaction due to enhanced user engagement, whereas restrictive, inflexible context hinders user satisfaction due to restricted user engagement (46-48).

This systematic review also argued that these factors include industry characteristics, legal demand, and technological environment, all shaping user satisfaction with IS. Many customers have certain legal and regulatory expectations from IS that result in satisfaction when met (39). Furthermore, the systematic review also found out that an organization's size and location play a role since a complex IS is likely necessary for large organizations, which many past literature coted (49-51). Another consideration is technological support, where more advanced users demand higher system performance while those in underdeveloped regions consider the system's suitability for available support (52).

**Future Implications and Recommendations**

These study findings guide future studies to boost IS user satisfaction and success. Future studies should look into this direction and consider implementing AI and machine learning into the system operation as these technologies facilitate system improvement and adjust the interface to the user's preferences. Organizations must prioritize system improvements and train their users to increase their proficiency and satisfaction. Organizations need to establish conditions that involve users in making decisions regarding IS so users become more satisfied, thereby assisting the organization. The development of IS becomes more satisfactory for users when designers follow existing legal frameworks, industry trends, and geographic requirements.

**Conclusion**

User satisfaction within the Information System (IS) emerges from multiple dimensions, which is why this systematic review method was determined. The dimensions of user satisfaction with the IS involve system and quality information alongside user characteristics, organizational influence, and contextual factors. System development needs to focus on creating stable IS, easy understanding, and accessible functionalities for end-users, and organizations must cultivate user-centered organizational cultures. These factors work to enhance IS

effectiveness as well as user satisfaction, which leads to greater organizational performance. Future study should target the implementation of contemporary technologies while creating industry-specific IT systems that align with geographic demands.

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