Factors Influencing Information Systems Adoption in Organizations: A Structured Literature Review

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Abstract

Information systems adoption is a strategic process that shapes operational efficiency, the quality of decision-making, business-process integration, and organizational competitiveness. Yet successful adoption depends not only on the availability of technology but also on user perceptions, organizational readiness, management support, and external environmental conditions. This study aims to identify and synthesize the factors that influence information systems adoption in organizations through a structured review of the literature. Using a qualitative approach and a conceptual thematic synthesis, the review draws on foundational references including the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), the Technology–Organization–Environment (TOE) framework, and the DeLone and McLean information systems success model. The synthesis identifies five main groups of factors: technological, organizational, environmental, individual and social, and implementation and continued use. Technological factors include relative advantage, ease of use, compatibility, complexity, security, and reliability. Organizational factors encompass management support, resource readiness, digital competence, and business-process fit. Environmental factors relate to competitive pressure, regulation, institutional support, and partner demands, while individual and social factors concern performance expectancy, effort expectancy, social influence, and facilitating conditions. The review argues that information systems adoption is a multidimensional phenomenon requiring the integration of individual and organizational perspectives. The resulting conceptual framework can inform empirical research and the design of more context-sensitive implementation strategies. Because the review rests on a defined reference corpus, its findings are positioned as a conceptual synthesis that warrants further validation through systematic searching and empirical testing.

Keywords: technology adoption; information systems; TAM; UTAUT; TOE; structured literature review

1. Introduction

Digital transformation has pushed organizations to rely on information systems to support data management, coordinate activities, control operations, serve stakeholders, and inform decision-making. Information systems are no longer merely administrative support tools; they have become part of the strategic infrastructure that shapes how organizations create value and respond to change in the business environment. Even so, investment in technology does not automatically translate into the expected benefits. Successful implementation depends on an organization's ability to align technology with user needs, work processes, available resources, and strategic goals. Within information systems research, technology adoption should be distinguished from information systems success. Adoption refers to the decision or process of accepting and using a technology, whether by individuals or by organizations. Information systems success, by contrast, spans a broader set of dimensions, including system quality, information quality, service quality, use, user satisfaction, and the net benefits produced. DeLone and McLean describe information systems success through the relationships among these dimensions [1]. This distinction matters because the decision to adopt a technology does not guarantee either sustained use or the realization of organizational benefits.

At the individual level, the Technology Acceptance Model (TAM) developed by Davis explains technology acceptance through perceived usefulness and perceived ease of use [2]. These two constructs provide a basis for understanding why users accept or reject a given system: technology perceived as useful for work and relatively easy to use tends to be accepted more readily. Nonetheless, an account centered on individual perceptions is not fully sufficient to explain adoption decisions that involve investment, changes to business processes, operational risk, and coordination across organizational units.

A subsequent development was the Unified Theory of Acceptance and Use of Technology (UTAUT), which integrates several perspectives on technology acceptance. Venkatesh et al. identified performance expectancy, effort expectancy, social influence, and facilitating conditions as the core constructs for explaining the acceptance and use of technology [3]. The model was later extended as UTAUT2, which added constructs particularly relevant to consumer use contexts [4]. Follow-up work by Khechine et al. [5], Dwivedi et al. [6], and Tamilmani et al. [7], [8] underscores the importance of evaluating the theoretical structure, the context of application, and the consistency of relationships among constructs in technology acceptance research.

At the organizational level, adoption decisions are shaped by considerations that extend beyond the characteristics and perceptions of prospective users. The Technology–Organization–Environment (TOE) framework developed by Tornatzky and Fleischer [9], and elaborated by Baker [10], positions the technological, organizational, and environmental contexts as the three main dimensions that shape technology-innovation decisions. The technological context covers the characteristics of available technologies and those already in use. The organizational context concerns structure, resources, size, and readiness. The environmental context, in turn, encompasses competitive conditions, industry, regulation, and external support.

The relevance of the TOE framework is evident in adoption research across varied organizational settings. Oliveira and Martins reviewed information technology adoption models at the firm level [11], while Gangwar et al. [12], Low et al. [13], and Oliveira et al. [14] examined the determinants of cloud-computing adoption across organizational and sectoral contexts. Wang et al. studied the determinants of radio-frequency identification (RFID) adoption in manufacturing [15]. Taken together, these studies provide a basis for considering technological characteristics and organizational conditions when explaining adoption decisions, while remaining attentive to differences in technology and research context.

More recent work has broadened attention to the integration of technical, managerial, social, and institutional factors. Ali et al. offer a systematic review of the challenges and strategies of technology adoption [16]. Yuwono et al. examine developments in information and communication technology among small and medium-sized enterprises [17], while Dewi et al. review the application of UTAUT in the pandemic era [18]. At the institutional level, Yan et al. synthesize the use of the TOE framework for educational-technology adoption across multiple technologies [19]. Studies of hospital information systems, electronic records management, and digital accounting information systems likewise show the importance of accounting for user characteristics, organizational needs, and the nature of the implemented system [20], [21], [22].

Beyond the adoption decision itself, organizations must also contend with the process of change that accompanies implementation. Hameed et al. frame technology adoption as a business process, so that deploying a technology is best understood as a sequence of activities spanning needs identification, evaluation of alternatives, decision, implementation, and organizational adjustment [23]. This perspective aligns with the value of interventions that help firms overcome barriers to adoption, as examined by Alfaro-Serrano et al. [24]. Adoption is therefore not merely a decision to purchase or install a system, but a socio-technical process that involves changes in behavior, structure, and work routines.

Although various models have been developed to explain technology acceptance and adoption, this body of literature employs different units of analysis, contexts, and constructs. TAM and UTAUT primarily explain acceptance and use at the individual level, whereas TOE is oriented toward innovation decisions at the organizational level. The DeLone and McLean success model complements these perspectives by explaining system quality and the benefits produced. Without a synthesis that connects the three perspectives, the analysis of adoption risks becoming fragmented across the psychology of users, organizational readiness, and implementation outcomes.

In light of this problem, the present study aims to identify the groups of factors that influence information systems adoption in organizations, to clarify the conceptual relationships among technological, organizational, environmental, and individual factors, and to formulate a conceptual framework that can serve as a basis for further research. Its contribution lies in a cross-model synthesis that distinguishes the determinants of the adoption decision, actual use, and information systems success. This synthesis is intended to provide a theoretical foundation for researchers and practical recommendations for organizations planning or evaluating information systems implementation.

2. Method

Study Design

This study adopts a qualitative approach based on a structured literature review. This approach was chosen to organize and synthesize the concepts, theoretical models, and prior studies concerning the factors that influence information systems adoption at the individual and organizational levels. The aim is not to test causal relationships statistically but to identify conceptual patterns, group the determinants of adoption, and build a theoretical integration grounded in the relevant literature.

The review proceeds from a defined set of references established as the material for analysis. This literature comprises conceptual articles, empirical studies, meta-analyses, systematic reviews, and books that provide the theoretical foundations of technology adoption. The diversity of source types is used to compare the explanatory scope of each model and to identify the links among individual acceptance, organizational decisions, and successful implementation.

Literature Sources and Scope

The reviewed material is organized around four groups of theoretical foundations. The first comprises technology acceptance models, including TAM and UTAUT together with their extensions and evaluations. The second covers organization-level adoption frameworks, chiefly TOE, along with research on the adoption of cloud computing and RFID. The third concerns information systems success models that explain system quality, information quality, service quality, use, satisfaction, and net benefits. The fourth consists of systematic reviews of technology adoption in organizations, including small and medium-sized enterprises, educational institutions, hospitals, electronic records management, and digital accounting information systems.

Literature was considered on the basis of its relevance to the research aim, its contribution to explaining adoption factors, and its connection to the context of information systems use. Conceptual sources were used to build the theoretical foundation, whereas empirical studies and synthesis reviews served as points of comparison for understanding how the models have been applied and developed across different contexts.

Analytical Procedure

The analysis was carried out through a conceptual thematic synthesis in four stages. The first stage, construct identification, recorded the main concepts discussed in each model and group of studies. The second stage, construct grouping, organized these concepts by shared meaning into the categories of technology, organization, environment, individual and social, and implementation and information systems success.

The third stage, cross-model comparison, identified the similarities, differences, and relationships among categories. Here, TAM and UTAUT were used to explain acceptance at the individual level, TOE was used to explain the context of adoption decisions at the organizational level, and the DeLone and McLean model was used to distinguish technology acceptance from information systems success. The fourth stage, conceptual synthesis, connected these factors to the adoption decision, actual use, and organizational benefits.

Methodological Limitations

This review is structured around the provided reference corpus rather than being a comprehensive systematic review of all available publications. Information on the databases searched, the search dates, the keyword strategy, the initial number of records, the number of articles screened, and the reasons for exclusion was not available in the research material. The study therefore does not claim to have conducted a comprehensive search or to have followed the full PRISMA procedure.

In addition, the analysis is a conceptual synthesis based on the scope and contribution of the cited literature rather than a re-coding of the full text of every article. The findings should be understood as a conceptual mapping of adoption factors that requires further validation through full-text retrieval and empirical research. This limitation provides the basis for developing a more replicable review protocol in future work.

3. Results

Mapping Theoretical Models in Information Systems Adoption Research

The conceptual synthesis indicates that the factors influencing information systems adoption can be understood through several theoretical models with distinct but complementary analytical foci. TAM explains technology acceptance through user perceptions; UTAUT broadens that explanation by incorporating social influence and facilitating conditions; TOE situates the adoption decision within the technological, organizational, and environmental contexts; and the DeLone and McLean model directs attention to system success and the benefits produced.

Davis positions perceived usefulness and perceived ease of use as the basis of technology acceptance [2]. In an organizational setting, perceived usefulness relates to the belief that a system can improve job performance, whereas perceived ease of use relates to the effort required to learn and operate the system. Both constructs are relevant for understanding users' initial responses, but they do not fully capture an organization's capacity to provide infrastructure, financing, training, and implementation support.

Venkatesh et al. expand the explanation of acceptance through performance expectancy, effort expectancy, social influence, and facilitating conditions [3]. This model helps show that the decision to use a technology is not merely the result of a personal evaluation of its benefits and difficulty. Perceptions about colleagues' expectations, leadership support, and resource availability can also shape use behavior. Subsequent evaluations by Khechine et al. [5] and Dwivedi et al. [6] are useful for treating UTAUT as a model to be assessed on the consistency of its constructs and its context of application, rather than applied mechanically to every type of technology.

At the organizational level, TOE offers a broader perspective. Baker describes the framework as an approach to understanding the adoption of technological innovation in terms of technology characteristics, organizational conditions, and the external environment [10]. The studies by Low et al. [13], Gangwar et al. [12], and Oliveira et al. [14] provide application contexts for the adoption framework in cloud computing. Wang et al. extend its relevance to RFID technology in the manufacturing sector [15], while Oliveira and Martins offer a basis for appreciating the diversity of firm-level information technology adoption models [11].

These differences in focus show that one model need not be treated as a substitute for another. TAM and UTAUT can explain acceptance and use behavior, whereas TOE explains the conditions that influence an organization's decision to adopt a technology. The DeLone and McLean model then helps assess whether an adopted system actually delivers the expected results [1]. Integration of the models is therefore needed to explain the full sequence from the adoption decision to the realization of benefits.

Technological Factors

Technological factors are the group of determinants associated with the characteristics of the technology, including perceived benefits, ease of use, compatibility, complexity, security, and system reliability. These factors shape judgments about how well a technology fits the needs of the organization and its users.

Perceived benefit is an important consideration because organizations tend to weigh a technology's contribution to productivity, service quality, cost efficiency, process speed, and information accuracy. At the individual level, this perception aligns with the construct of perceived usefulness in TAM [2] and performance expectancy in UTAUT [3]. Although the terms are not fully identical, both emphasize the link between technology use and expected work outcomes.

Ease of use and complexity should be distinguished by their level of analysis. Ease of use concerns an individual's perception of the effort required to learn and operate a system. Complexity, in the organizational adoption perspective, can encompass the difficulty of integration, procedural change, specialized skill requirements, and technical uncertainty. A system with an easy-to-use interface is not necessarily easy to integrate with legacy systems or organizational infrastructure. Technology evaluation therefore needs to consider both the user experience and the technical demands of implementation.

Compatibility is likewise relevant, since a technology must fit existing systems, business processes, information needs, and organizational policies. Incompatibility can raise adjustment costs and increase the risk of operational disruption. In cloud-computing adoption research, the studies by Low et al. [13], Gangwar et al. [12], and Oliveira et al. [14] offer a context for examining the relationship between technological characteristics and adoption decisions. The effect of each characteristic, however, cannot be assumed to be the same across all technologies or sectors.

Security and reliability are further considerations, particularly when a system handles sensitive information, financial transactions, patient data, or organizational records. Concerns about data confidentiality, unauthorized access, information loss, and dependence on service providers can shape perceptions of risk. Ultimately, technological factors determine not simply whether a system is available, but whether the technology is seen as useful, feasible, secure, and appropriate for use in a particular organizational context.

Organizational Factors

Organizational factors encompass top-management support, resource readiness, human-resource competence, organizational culture, decision-making structure, and the fit between the technology and organizational strategy and processes. Within the TOE framework, these factors describe the internal capacity of an organization to initiate, finance, implement, and sustain the use of a technology [9], [10].

Top-management support is important because information systems adoption often requires budget allocation, procedural change, prioritization, and cross-unit coordination. Such support cannot be realized through formal approval of a technology investment alone. Management needs to communicate the goals of implementation, provide resources, manage resistance to change, and ensure that the adopted system is aligned with organizational objectives. Without consistent support, implementation risks being stalled by competing priorities and weak user commitment.

Organizational readiness concerns the availability of financial resources, technological infrastructure, expertise, work procedures, and the capacity to manage change. This factor matters because the benefits expected from a technology are not always commensurate with an organization's capacity to implement it. Organizations with limited resources may struggle to finance the initial investment, maintenance, training, security, and system integration. These concerns are especially relevant for small and medium-sized enterprises, as highlighted in the review by Yuwono et al. [17].

Digital competence and human-resource readiness also determine an organization's ability to exploit a technology. Skill gaps can increase dependence on external parties and reduce users' ability to resolve operational problems. Needs-based training, technical support, and continuous learning can help bridge the gap between the availability of a system and users' capabilities. Training, however, needs to be integrated with work-process design so that improved skills genuinely translate into changed practice.

Beyond resources and competence, the fit between a system and business processes affects the sustainability of adoption. Implementing a system that requires procedural change without regard to operational needs may create an additional burden. Well-designed integration, by contrast, can improve data consistency, speed coordination, and reduce duplicated work. Hameed et al. provide a conceptual basis for viewing adoption as a business process rather than a purely technical decision [23]. This perspective underscores that organizational readiness includes the capacity to redesign processes and adjust work routines.

External Environmental Factors

Environmental factors include competitive pressure, customer demands, the influence of business partners, regulation, government support, the availability of technology providers, and industry conditions. In the TOE framework, the external environment shapes the opportunities, incentives, and constraints that organizations face when considering technological innovation.

Competitive pressure can prompt organizations to adopt information systems in order to improve service speed, process efficiency, transparency, and the quality of decision-making. In some situations, adoption is also driven by the need to remain aligned with industry standards or customer expectations. Yet competitive pressure does not always lead to effective adoption. Decisions that merely follow a trend without assessing needs can result in investments that do not match an organization's capacity and priorities.

Relationships with business partners can also influence adoption decisions. An organization may need a system compatible with the platforms of suppliers, customers, financing institutions, or distribution partners. In such cases, adoption is based not only on internal benefits but also on the need for integration and information exchange within the business network. This influence shows that organizational decisions are often formed through interdependence among actors rather than internal considerations alone.

Regulation and institutional support are further relevant factors. Data-protection policies, security standards, reporting requirements, and sector-specific provisions can heighten the need for particular systems while adding compliance costs. On the other hand, government support, digital infrastructure, access to financing, and capacity-building programs can help reduce barriers to adoption. The external environment can therefore act as both a driver and a constraint, depending on the characteristics of the technology, the industry, and the organization's readiness. Ali et al. provide a basis for understanding the challenges and strategies of technology adoption in an integrated manner [16]. In more specific contexts, research on cloud-computing and RFID adoption demonstrates the relevance of examining organizational characteristics in relation to the technological and industry context [12], [13], [15]. Environmental factors are thus best analyzed alongside internal factors rather than treated as variables that operate in isolation.

Individual and Social Factors

Individual and social factors mainly concern perceived benefits, ease of use, performance expectancy, effort expectancy, social influence, and facilitating conditions. This group helps explain how members of an organization evaluate a technology and translate the adoption decision into use behavior.

Perceived usefulness and performance expectancy capture users' belief that a technology will improve their work outcomes. When benefits are not visible or do not match task needs, users may show low acceptance even when a system has been provided by the organization. Conversely, technology that helps speed up work, improve accuracy, and reduce errors tends to gain better acceptance when those benefits are genuinely felt in practice [2], [3].

Effort expectancy relates to the ease of learning and using a system. A complicated interface, unclear instructions, and workflows that do not match users' habits can increase the burden of adaptation. In organizations, this problem can be magnified when a technology is deployed without adequate training or technical support. System design and the management of the user experience should therefore be considered part of the adoption strategy.

Social influence refers to an individual's perception of the expectations of people or groups they regard as important. In an organizational context, leadership support, work-group norms, and the practices of colleagues can shape perceptions of the legitimacy of using a system. Social influence, however, does not always guarantee sustained acceptance. Users may comply with a usage policy without genuinely experiencing a technology's benefits. Formal compliance therefore needs to be distinguished from substantive acceptance and effective use.

UTAUT2 adds constructs developed primarily to explain technology acceptance in consumer contexts, including hedonic motivation, price value, and habit [4]. Tamilmani et al. examine this model through meta-analytic evaluation and systematic review [7], [8]. In organizational settings, these additional constructs should be selected judiciously according to the characteristics of the system. Habit, for example, may be relevant for explaining repeated use, whereas hedonic motivation may be less dominant for administrative systems whose use is mandated.

These conceptual findings indicate that individual characteristics cannot be separated from the social environment and working conditions. Digital competence, prior experience, task needs, and access to technical assistance can all shape the relationship between perception and use behavior. Organizations therefore need to account for the diversity of their users when designing training, change communication, and support mechanisms.

Implementation, System Quality, and Continued Use

Information systems adoption does not end when the investment decision is approved or the system begins operating. Successful use requires the management of implementation, system quality, information quality, service support, and ongoing evaluation of benefits.

The DeLone and McLean model provides a framework for distinguishing system quality, information quality, service quality, use, user satisfaction, and net benefits [1]. System quality relates to the technical and operational characteristics of a system; information quality concerns the quality of the information output; and service quality reflects the support provided to users. These three dimensions help explain the use experience and satisfaction, which in turn relate to the benefits a system produces.

Within this framework, use should not automatically be treated as an indicator of success. A system mandated by an organization may show a high frequency of use even when users encounter difficulties or derive inadequate benefit. Conversely, a system designed to fit needs and supported by high-quality information can enhance satisfaction and work effectiveness. Adoption evaluation should therefore distinguish the decision to accept a technology, actual use, the quality of the use experience, and organizational outcomes.

The study by Al-Fraihat et al. on the success of e-learning systems provides additional context for understanding the relationship between system quality and successful use in a learning environment [25]. Handayani et al., meanwhile, examine the factors in user acceptance of hospital information systems and related technologies [20]. Both contexts underscore the importance of attending to the characteristics of the application domain when assessing system quality and acceptance.

Managing implementation is also bound up with organizational intervention. Alfaro-Serrano et al. examine interventions to encourage technology adoption in firms, providing a basis for attending to support strategies and efforts to overcome barriers [24]. Conceptually, interventions can target skill development, information provision, strengthened management support, and work-process adjustment. The effectiveness of each intervention still needs to be assessed in light of the type of technology, firm characteristics, and the outcomes sought.

In more specialized settings, research on electronic records management and digital accounting information systems broadens attention to the sustainability of adoption within particular organizational functions [21], [22]. Findings from one function or sector, however, cannot be generalized directly to all organizations. Evaluation must account for the sensitivity of the information, the complexity of the process, regulatory requirements, and the consequences of operational error.

Integrative Synthesis of Information Systems Adoption Factors

Drawing on the cross-model comparison, the factors of adoption can be grouped into five interrelated dimensions. Table 1 presents a summary of this conceptual synthesis.

Table 1. Synthesis of Factors Influencing Information Systems Adoption

Dimension	Key factors	Conceptual mechanism	Literature basis
Technological	Relative advantage, ease of use, compatibility, complexity, security, reliability	Shape judgments of a technology's usefulness, feasibility, and risk	Davis [2]; Baker [10]; Low et al. [13]
Organizational	Management support, resources, digital competence, change readiness, process fit	Determine the capacity and commitment to adopt and implement the system	Tornatzky and Fleischer [9]; Hameed et al. [23]; Oliveira and Martins [11]
Environmental	Competition, partner demands, regulation, institutional support, external infrastructure	Shape pressures, opportunities, incentives, and constraints on adoption	Baker [10]; Gangwar et al. [12]; Oliveira et al. [14]
Individual and social	Performance expectancy, effort expectancy, social influence, facilitating conditions, prior experience	Shape acceptance, intention to use, and use behavior	Venkatesh et al. [3]; Khechine et al. [5]; Dwivedi et al. [6]
Implementation and success	System, information, and service quality; satisfaction; training; ongoing support; net benefits	Determine the quality of the use experience and the realization of benefits after adoption	DeLone and McLean [1]; Al-Fraihat et al. [25]; Alfaro-Serrano et al. [24]

Note. Source: Authors' conceptual synthesis based on the reviewed literature.

The table shows that the five dimensions serve different explanatory functions. Technological and environmental factors form the context and opportunity for adoption; organizational factors determine readiness and implementation capacity; individual and social factors explain acceptance and use behavior; and implementation and success factors explain the quality of use and the realization of benefits. These dimensions need not operate independently. Resource availability, for instance, can determine an organization's ability to provide training, while system quality can shape perceived benefits and user acceptance.

The synthesis also suggests that information systems adoption is best understood as a sequence of processes. In the early stage, an organization recognizes a need and assesses the suitability of a technology. The next stage involves the investment decision, resource preparation, and implementation. Once a system is in place, acceptance and actual use are shaped by the user experience, technical support, and the quality of the system and information. In the evaluation stage, the organization judges whether that use yields benefits consistent with the original objective.

Conceptually, this sequence can be depicted as follows: the technological, organizational, and environmental context → the adoption decision → organizational implementation and support → acceptance and actual use → the quality of experience and organizational benefits. Individual perceptions and social influence may affect more than one stage, while feedback from use and benefit evaluation can prompt system adjustments or subsequent investment decisions. This flow is the product of a conceptual synthesis rather than a causal relationship tested empirically in the present study.

4. Discussion

Integrating Individual and Organizational Perspectives

The synthesis indicates that an explanation of information systems adoption becomes more comprehensive when individual and organizational perspectives are combined. TAM and UTAUT explain why a person accepts or uses a technology, whereas TOE explains why an organization chooses, and has the capacity, to adopt it. Because the two operate at different levels of analysis, combining them requires clarity about the unit of analysis.

Davis emphasizes perceived usefulness and perceived ease of use [2], while Venkatesh et al. broaden the explanation through performance expectancy, effort expectancy, social influence, and facilitating conditions [3]. This framing helps identify users' responses to a newly introduced system. Positive user perceptions, however, do not always result in adoption if the organization lacks the budget, infrastructure, or decision-making authority required.

Conversely, an organization may adopt a system because of regulatory pressure, partner demands, or strategic need even when some users are not yet ready to use it. This situation reveals a possible gap between a formal decision and user acceptance. Integrating TAM or UTAUT with TOE thus allows research to explain how organizational readiness and technological characteristics relate to user perceptions and behavior. This integrative approach is consistent with the attention Gangwar et al. give to combining TAM and TOE in cloud-computing adoption research [12].

That said, combining models does not mean that every construct must be included in a single research model. The choice of constructs should reflect the research question, the type of system, the characteristics of respondents, and the level of analysis. For research on firm-level investment decisions, factors of organizational and environmental readiness may be more prominent. For research on employees' acceptance of an application, by contrast, perceived usefulness, ease of use, social influence, and facilitating conditions may take center stage.

Organizational Readiness as the Link Between Technological Potential and Use

One important implication of this synthesis is the need to distinguish a technology's potential from an organization's ability to realize that potential. A technology may offer high benefits, but those benefits are not achieved automatically if the organization cannot finance implementation, integrate processes, or provide user support.

The TOE framework helps explain the internal conditions that form adoption capacity [10]. In practice, organizational readiness needs to be understood as multidimensional. Financial readiness concerns the ability to bear investment and maintenance costs; technical readiness covers infrastructure, integration, and security; and human-resource readiness relates to competence, leadership, and the willingness to face change.

This implication is relevant for small and medium-sized enterprises, which may face limited expertise and resources for implementation and maintenance. The review by Yuwono et al. offers a context for developing research on the barriers to, and opportunities for, information and communication technology adoption in this group of organizations [17]. Organizational limitations should not be assumed to be uniform, however. The level of readiness can differ by sector, scale of operations, digital experience, business-process complexity, and the characteristics of the technology.

An effective adoption strategy should therefore begin with an assessment of the gap between technological needs and organizational capacity. Such an assessment can guide the sequencing of implementation, training needs, technology choices, and the degree of dependence on external providers. A phased approach can also reduce the risk of investment that outstrips an organization's readiness.

Environmental Context and the Need for a Contingency Approach

Environmental factors do not always exert the same influence on every organization. Competitive pressure can be a strong driver when an organization needs to improve service speed or maintain compatibility with partners. For

organizations with limited resources, however, the same pressure can heighten the risk of rushed decisions or adoption that does not match actual needs.

This points to the importance of a contingency approach—the understanding that the relationship between adoption factors and technology decisions depends on the conditions of application. Cloud-computing adoption research by Low et al. [13], Gangwar et al. [12], and Oliveira et al. [14] shows the relevance of examining a technology within particular organizational and sectoral contexts. Wang et al.'s study of RFID in manufacturing also offers a context different from that of service-oriented or administrative information-processing systems [15].

Findings about the adoption of one technology therefore cannot be applied directly to another without considering differences in cost, risk, infrastructure, and benefits. A system managing electronic records, for instance, may face requirements for document retention, traceability, and compliance that differ from those of an e-learning or cloud-computing system. These contextual differences are a reason to use TOE as a contextual framework rather than a universal list of variables with fixed weights.

Distinguishing Adoption, Use, and Information Systems Success

A further conceptual contribution is the assertion that the adoption decision, actual use, and information systems success are distinct outcomes. They are related but cannot be interchanged as a single construct.

Adoption indicates that an organization or user has accepted and begun to apply a technology. Actual use refers to the practice of using a system in real activities, whereas information systems success encompasses system and information quality, user satisfaction, and the benefits produced. The DeLone and McLean model provides a basis for distinguishing these dimensions of success [1].

This distinction is important for evaluating implementation. An organization may meet its system-deployment targets yet not necessarily succeed in integrating the technology into work processes. A high frequency of use likewise does not automatically indicate satisfaction or benefit, especially when use is mandated. Indicators of success therefore need to be tailored to the purpose of the system and the characteristics of its context.

The study by Al-Fraihat et al. on e-learning systems [25] and that by Handayani et al. on the acceptance of hospital information systems [20] provide domain-specific contexts for examining system quality and use. In further research, adoption can be measured through the decision or intention to adopt, use through actual behavior, and success through quality, satisfaction, and benefits. Separating these will improve the precision of measurement and reduce the risk of overly broad conclusions.

Practical Implications for Managing Adoption

For organizational managers, the synthesis suggests that an adoption strategy is best designed as a program of socio-technical change. The first step is to identify operational needs and the problems to be solved, and then to assess the fit between the technology and business processes, resource capacity, and user needs. This approach helps avoid decisions based solely on technological trends or external pressure.

The second step is to secure management support and organizational readiness. Setting implementation goals, allocating a budget, assigning responsibility, arranging training, and establishing problem-handling mechanisms should all be in place before a system is deployed widely. Such readiness must cover not only infrastructure but also data governance, division of responsibilities, security, and the sustainability of maintenance.

The third step is to manage user acceptance by communicating benefits, involving users in the implementation process, designing for task needs, and providing adequate technical support. These strategies are consistent with the relevance of TAM and UTAUT constructs in explaining technology acceptance [2], [3]. Communication strategies, however, should not substitute for improving the system itself. User resistance can reflect skill gaps, but it may also signal design problems or a mismatch between the system and work needs.

The fourth step is post-implementation evaluation using indicators that reflect quality and benefit. Evaluation can cover system reliability, information accuracy, support quality, user satisfaction, the relevant level of use, and the impact on work processes. The results are used to improve the system and to determine whether the expected benefits have been achieved. This approach treats adoption as a continuous process rather than an activity that ends once a system is launched.

Agenda for Future Research

This synthesis points to several research opportunities. First, empirical studies could test the integration of TOE with TAM or UTAUT to explain the relationships among organizational readiness, technological characteristics, and user acceptance. Any model developed should distinguish the organizational unit of analysis from the individual unit so that relationships among variables are not misinterpreted.

Second, research could test whether management support, digital competence, and system quality act as facilitating conditions or as mechanisms that mediate the influence of technological factors on use. Such relationships need to be formulated as clear hypotheses and tested with appropriate data rather than assumed to be findings of this conceptual review.

Third, cross-sector research could examine differences in the determinants of adoption across small and medium-sized enterprises, hospitals, educational institutions, manufacturing, and organizations that manage records and

financial information. The studies by Dewi et al. [18], Handayani et al. [20], Yuwono et al. [17], Bizi et al. [21], and Evendy and Kurnia [22] offer starting points for identifying contexts worthy of further study. Such comparison can help determine which factors are relatively consistent and which depend heavily on sector.

Fourth, future research should pay closer attention to the post-adoption phase. Many studies focus on the intention or decision to adopt, yet continued use, discontinuance, system adjustment, and the realization of benefits are also important for organizations. Longitudinal data can help explain changes in user perceptions and system performance throughout the implementation process.

Fifth, subsequent work should employ a replicable systematic-review protocol, including the databases searched, keywords, year range, inclusion and exclusion criteria, quality-appraisal procedures, and synthesis methods. This would strengthen transparency and enable a more systematic comparison of the available empirical evidence.

Limitations of the Study

This study has limitations that should be borne in mind when interpreting its results. First, the corpus analyzed is based on the provided reference list, so it cannot be assumed to cover all relevant literature. Second, because the full text and extraction data of each article were not analyzed exhaustively through a documented process, the grouping of factors is a conceptual synthesis rather than the product of systematic coding of all empirical findings. Third, the study did not conduct a meta-analysis and did not compute effect sizes or the relative strength of each factor's influence. Its results therefore cannot be used to claim that one factor is statistically more dominant than another. Fourth, differences in sector, technology, unit of analysis, and research design across the references limit generalization. Fifth, several references published in 2025–2026 require verification of their metadata and full text before the manuscript is submitted to a journal.

These limitations do not negate the value of the resulting conceptual framework, but they indicate that the framework is a foundation for further research. Strengthening the method through systematic searching, quality appraisal of articles, and documentation of the selection process is needed so that claims about coverage and the strength of evidence can be justified more rigorously.

5. Conclusion

This study synthesizes the factors that influence information systems adoption in organizations by integrating the perspectives of TAM, UTAUT, TOE, and the DeLone and McLean information systems success model. The review shows that adoption is a multidimensional phenomenon that cannot be explained through technological characteristics or user perceptions alone. It is also shaped by organizational readiness, external environmental conditions, social interaction, and the ability to manage implementation and sustain use.

Five main groups of factors were identified: technological, organizational, environmental, individual and social, and implementation and information systems success. Technological factors shape judgments about benefit, ease, compatibility, security, and complexity. Organizational factors determine the capacity to provide resources, management support, competence, and change readiness. Environmental factors create the opportunities and pressures that influence the adoption decision. Individual and social factors relate to acceptance and use behavior, while implementation and system-quality factors determine the user experience and the potential realization of benefits.

The main contribution of this review is an integrative framework that distinguishes the adoption decision, actual use, and information systems success. These three aspects are interrelated but require different explanations and indicators. Organizations should therefore manage adoption as a continuous process encompassing needs identification, assessment of technological fit, strengthening of organizational readiness, user support, and post-implementation evaluation of benefits.

From a practical standpoint, organizations are advised to align their technology choices with strategic goals and operational needs, to secure management support and resource readiness, and to evaluate implementation through relevant indicators of quality and benefit. From an academic standpoint, further research should test the integration of adoption models across different sectors, examine post-adoption processes, and use research designs capable of explaining relationships among variables empirically.

These conclusions should be read in light of the study's methodological limitations: the synthesis was developed from a provided reference list and is not the product of a comprehensive systematic review with a documented search protocol. The resulting framework can therefore serve as a basis for developing research models, but claims about the completeness of the evidence and the dominance of particular factors require verification through further literature searching and empirical testing.

Declarations

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Data Availability. This study is a literature-based review. All sources analyzed are listed in the reference section, together with their available digital object identifiers (DOIs) or repository links. No new datasets were generated or analyzed in this study.

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