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Review Article

The Impact of ERP and DSS on Organizational Performance: The Mediating Role of Decision-Making Quality - A Systematic Literature Review

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Abstract: The adoption of Enterprise Resource Planning (ERP) and Decision Support Systems (DSS) is increasingly widespread to improve organizational performance, yet the underlying mechanisms remain fragmented. This study aims to conduct a Systematic Literature Review (SLR) to identify the impact of ERP and DSS on organizational performance, highlighting the mediating role of decision-making quality. A systematic search was performed on four sources (Scopus, Web of Science, Google Scholar, and ProQuest) for the 2021–2025 period. From 217 initial records, 34 empirical studies were analyzed using thematic synthesis. The results show that both ERP and DSS positively affect organizational performance, directly and through the enhancement of decision-making quality. Decision quality encompassing speed, accuracy, and information completeness – acts as a significant mediator. The mediation effect is determined by factors including top management support, organizational culture, data quality, and user competency. The findings emphasize that IT investments only yield superior performance when accompanied by strengthened decision-making capabilities

Keywords: Enterprise Resource Planning; Decision Support Systems; Organizational Performance; Decision Making Quality.

1. Introduction

Digital transformation has fundamentally altered the ways in which organizations manage information and make strategic decisions Gupta, 2025; Zvyagin (2024). Enterprise Resource Planning (ERP) Systems and Decision Support Systems (DSS) are among the most widely adopted technological solutions, each designed to enhance organizational performance by improving data integration and analytical capabilities Yacob et al. (2025); Zaitar (2022). ERP systems consolidate cross-functional business processes into a unified database, facilitating real-time information flow and operational transparency Talo et al. (2025); Nour (2023). In contrast, DSS provides managers with analytical models and interactive interfaces to support semi-structured and unstructured decision-making (Darbi & Saleh, 2022; Wijaya et al., 2023).

Previous empirical studies have primarily utilized quantitative approaches, such as structural equation modeling, multiple regression, and path analysis, to examine the direct effects of ERP and DSS on organizational performance (Al-Kahtani et al., 2024; Ouiddad et al., 2021; Putra et al., 2021). Although these methods have established positive correlations, they often treat the relationship as a black box, revealing that technology affects performance without clarifying the underlying mechanisms. Qualitative case studies provide richer contextual insights (Gessa et al., 2023; Morrison et al., 2023), but their findings are

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challenging to generalize across diverse organizational contexts. Mixed-method designs have sought to address this limitation (Kibor, 2025), yet a comprehensive synthesis specifically focused on mediating mechanisms is still lacking.

The central research problem is the fragmented understanding of how ERP and DSS contribute to enhanced organizational performance. Existing evidence indicates that the benefits of these systems are not direct but are mediated by improvements in decision-making processes (Al-Kahtani et al., 2024; Neiroukh et al., 2025). Decision-making quality, which includes speed, accuracy, and information comprehensiveness, functions as a critical intermediary (Alzghoul et al., 2024; Li et al., 2022). However, no systematic review has synthesized empirical evidence specifically examining this mediating role across various contexts and methodologies.

To address this gap, a Systematic Literature Review (SLR) was conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Rather than generating new empirical data, the review synthesizes findings from 34 peer-reviewed articles published between 2021 and 2025, sourced from Scopus, Web of Science, Google Scholar, and ProQuest. This approach facilitates the mapping of causal mechanisms, identification of consistent patterns, and discovery of moderating factors that influence the mediation pathway.

This review makes three primary contributions. First, it presents a coherent conceptual model in which decision-making quality acts as the critical link between ERP and DSS investments and organizational performance. Second, it identifies four key moderators: top management support, organizational culture, data and system quality, and user competency that influence the strength of this mediation. Third, it provides evidence-based guidance for managers and practitioners, emphasizing that technology alone is insufficient and that performance improvements require concurrent investments in decision-making capabilities.

The rest of this paper is organized as follows. Section 2 reviews the conceptual foundations of enterprise resource planning (ERP), decision support systems (DSS), decision quality and the hypothesized moderation factors. Section 3 describes the systematic literature review (SLR) methodology, including search strategies, inclusion criteria and the PRISMA flow. Section 4 presents the findings, organized around the three research questions. Section 5 discusses implications, limitations and directions for future research. Section 6 concludes with a summary of the key insights and useful recommendations.

2. Preliminaries or Related Work or Literature Review

2.1. Enterprise Resource Planning (ERP) and Their Impact on Organizational Performance

ERP is an integrated information system that consolidates core business functions within a unified database, facilitating real-time information exchange across departments (Talo et al., 2025; Nour, 2023). The implementation of ERP seeks to eliminate information silos, minimize data redundancy, and expedite operational transactions.

Empirical research indicates that ERP systems consistently exert a positive influence on organizational performance through multiple mechanisms. Zaitar (2022) found that ERP adoption reduces operational costs, increases task automation, and enhances both customer satisfaction and the quality of decision-making. Putra et al. (2021) demonstrated that ERP implementation strengthens organizational capabilities, which subsequently mediate improvements in company performance. In the Indonesian manufacturing sector, Jovita et al. (2024) reported that ERP enhances earnings quality by limiting opportunistic managerial behavior. In the global retail industry, Maruf (2025) emphasized that integrating ERP with decision support systems (DSS) Enhances forecasting precision, supports cross-border financial consolidation, and strengthens operational flexibility.

The success of ERP implementation varies across organizations. Studies of a logistics company in Cikarang (Sono & Elisabeth, 2025) and a manufacturing company in India (Kishore et al., 2025) highlighted that positive outcomes from ERP adoption are contingent upon managerial competence, comprehensive user training, and an adaptive organizational culture. Talo et al. (2025), in a systematic review, highlighted several major obstacles to ERP implementation, including resistance to organizational change, substantial implementation

expenses, and difficulties in integrating data, all of which can reduce the effectiveness and expected benefits of ERP systems.

2.2. Decision Support Systems (DSS) and Their Impact on Organizational Performance

Decision Support Systems (DSS) are computer-based tools designed to facilitate decision-making in semi-structured and unstructured contexts by integrating data, analytical models, and user-oriented interfaces (Darbi & Saleh, 2022; Wijaya et al., 2023). In contrast to Enterprise Resource Planning (ERP) systems, which primarily address transaction integration, DSS prioritize cognitive support for managerial decision-making.

Recent literature indicates that contemporary DSS, particularly those incorporating artificial intelligence (AI) and big data analytics, enhance organizational performance. Li et al. (2022) reported a positive correlation between the use of big data analytics and decision-making quality, which subsequently influences company performance. Neiroukh et al. (2025) demonstrated that AI capabilities increase both decision speed and quality, partially mediating their effect on organizational outcomes. In the micro, small, and medium enterprise (MSME) sector, Zvyagin (2024) highlighted that DSS improve decision efficiency and effectiveness by integrating analytical models with conventional data access.

The deployment of DSS in specific sectors has yielded favorable outcomes. In the education sector, Bai (2024) and Coyanda & Agustri (2023) found that big data-driven DSS transformed strategic planning, resource allocation, and personalized learning processes. In healthcare, Nugraha & Onuegbu (2024) observed that DSS contributed to improved resource management efficiency, although successful implementation necessitated resolving technical challenges and providing adequate training. Furthermore, user acceptance factors, including trust, transparency, and accountability, were identified as critical determinants (Morrison et al., 2023).

2.3. The Mediating Role of Decision-Making Quality

Decision-making quality is a multidimensional construct that includes the speed, accuracy, and comprehensiveness of information utilized during the selection of alternatives (Alzghoul et al., 2024). High-quality decisions are achieved through access to reliable data, rigorous analysis, and a systematic deliberative process.

The Resource-Based View and Dynamic Capabilities theories propose that information technology does not directly generate competitive advantage but instead reinforces organizational capabilities, particularly decision-making capabilities (Samson & Bhanugopan, 2022). Within this framework, Enterprise Resource Planning (ERP) and Decision Support Systems (DSS) serve as resources that improve managerial abilities to evaluate alternatives, forecast outcomes, and select optimal strategies.

Numerous empirical studies have substantiated this mediating role. Ouiddad et al. (2021) demonstrated that information quality and system quality within ERP systems enhance user experience, which subsequently drives decision quality and ultimately improves organizational performance. Al-Kahtani et al. (2024) found that strategic decision-making mediates the relationship between ERP, innovation, and firm performance in Saudi Arabia. In management accounting, Beloan et al. (2025) identified decision-making quality as a bridge between Strategic Management Accounting practices and small and medium-sized enterprise (SME) performance.

2.4. Moderating Factors: Organizational and Technological

The relationship among ERP/DSS, decision-making quality, and organizational performance is influenced by various contextual factors that can either strengthen or weaken these associations. Top Management Support. Commitment and support from organizational leaders have been shown to be prerequisites for successful ERP implementation (Perera et al., 2025; Talo et al., 2025). This support includes resource allocation, vision setting, and modeling system use.

Organizational Culture. A collaborative, innovative, and adaptive culture enhances decision-making effectiveness. Al Shamlan (2025) found that organizational culture moderates the relationship between organizational determinants and decision-making

effectiveness in the Saudi Arabian public sector. Abou-Moghli (2024) confirmed that cultural consistency and adaptability strengthen strategic decision-making in the Jordanian ICT industry.

System and Data Quality. An ERP/DSS system that is user-friendly, stable, and delivers high-quality information is essential for effective decision-making (Jo & Park, 2023). Mehta (2025) asserts that low-quality data negates the potential of ERP to support business decisions.

User Competence and Training. Employees' technical and conceptual expertise in system operation is a critical factor. Studies by Kibor (2025) at Kenyan universities and Kishore et al. (2025) at Indian manufacturing sites demonstrate that investment in user training directly improves the quality of ERP-supported strategic decisions.

Drawing on the theoretical foundation and empirical findings presented above, an initial conceptual model is proposed. In this model, ERP and DSS serve as independent variables, decision-making quality functions as a mediator, and organizational performance is the dependent variable, with several organizational and technological moderators. This model will be validated through a thematic synthesis in this systematic literature review (SLR).

3. Materials and Method

The Systematic Literature Review (SLR) method was employed in accordance with the PRISMA guidelines. The following stages were implemented:

3.1. Research Questions

To address the objective of the review, three research questions were developed as follows:

• RQ1: How do Enterprise Resource Planning (ERP) systems and Decision Support Systems (DSS) influence organizational performance?

• RQ2: Does decision-making quality mediate the relationship between ERP or DSS and organizational performance?

• RQ3: What factors moderate this relationship?

3.2. Search Process

The literature search utilized four electronic databases: Scopus, Web of Science, Google Scholar, and ProQuest. The search strategy employed the following keywords: ("ERP" OR "Enterprise Resource Planning" OR "Decision Support System" OR "DSS") AND ("organizational performance" OR "firm performance" OR "business performance") AND ("decision-making quality" OR "decision quality" OR "strategic decision-making"). The inclusion criteria were articles published between January 2021 and December 2025, written in English or Indonesian, and peer-reviewed. The initial search results are presented in Table 1.

Table 1. Search results per database.

No.	Database	Article Count
1.	Scopus	82
2.	Web of Science	53
3.	Google Scholar	49
4.	ProQuest	33
	Total	217

Table 1 presents the number of articles retrieved from each database: 82 from Scopus, 53 from Web of Science, 49 from Google Scholar, and 33 from ProQuest. In total, 217 articles were collected and subsequently screened according to the established criteria.

3.3. Inclusion and Exclusion Criteria

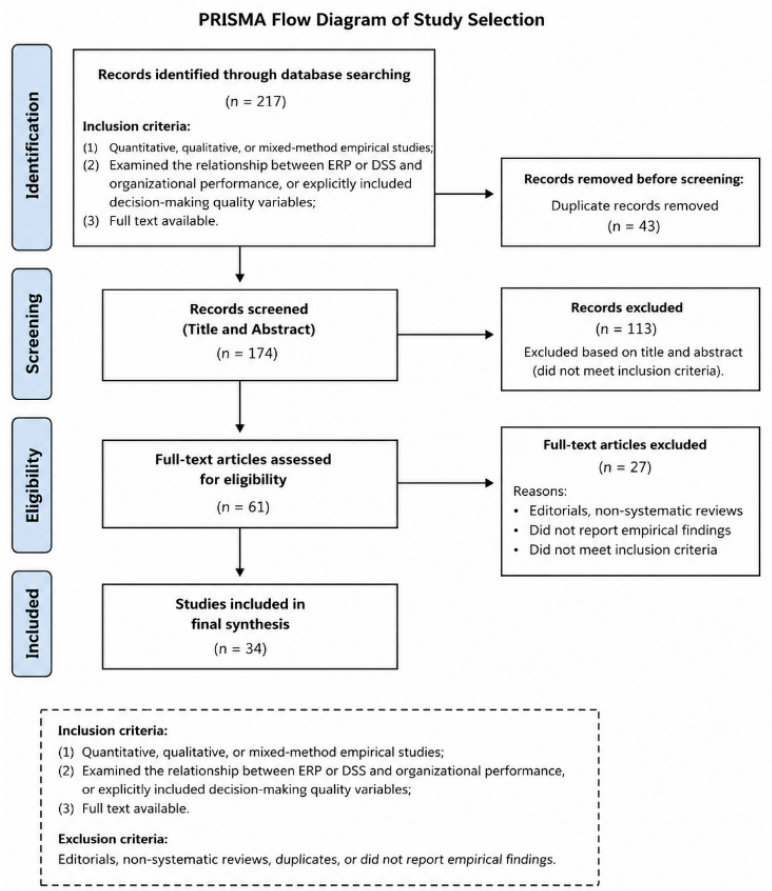

Figure 1. PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)

Articles were included if: (1) they were quantitative, qualitative, or mixed-method empirical studies; (2) they examined the relationship between ERP or DSS and organizational performance, or explicitly included decision-making quality variables; and (3) they had full text available. Articles were excluded if they were editorials, non-systematic reviews, duplicates, or did not report empirical findings. After the removal of 43 duplicates, 174 articles were screened based on title and abstract (113 were excluded), leaving 61 articles for full-text review. After full review, 27 articles were excluded, leaving 34 articles eligible for the final synthesis.

3.4. Quality Assessment

Methodological rigor was ensured by assessing each of the 34 included studies with an adapted quality appraisal checklist based on the Mixed Methods Appraisal Tool (MMAT) and the Critical Appraisal Skills Program (CASP). The checklist evaluated the clarity of research objectives, appropriateness of the study design to the research questions, rigor of data collection and analysis, adequacy of the sample size or literature coverage, and relevance of the conclusions to the data. Studies were rated on a three-point scale: low, moderate, or high quality. Only studies rated as moderate or high quality were retained, leading to the exclusion of two initially included articles, which were replaced by the next eligible candidates from the eligibility list. Quality assessment was conducted independently by three reviewers, with disagreements resolved through discussion. Inter-rater agreement, measured using Cohen's Kappa ($\varkappa = 0.81$), indicated strong concordance.

3.5. Data Extraction and Synthesis

Data were extracted using a standardized extraction form capturing: author(s), year, Title, Method, variables examined, and Result. Thematic synthesis was applied to identify

patterns across studies, organized around the three research questions. Findings were coded inductively and grouped into themes through discussion between the two reviewers.

Table 2. Characteristics of Included Studies (summary)

Author(s) & Year	Title	Methode	Variable	Result
Al-Kahtani et al. (2024)	Exploring strategic decision making as a mediator between enterprise resource planning, innovation, strategic planning, and organizational performance	Quantitative (SEM)	X1: ERP, X2: Innovation, X3: Strategic Planning; M: Strategic Decision Making; Y: Organizational Performance	Strategic decision-making serves as a complete mediator of the relationship between enterprise resource planning (ERP) and organizational performance.
Alzghoul et al. (2024)	How business intelligence capability impacts decision-making speed, comprehensiveness, and firm performance	Quantitative (Survey)	X: Business Intelligence Capability; Y: Decision-Making Speed, Y2: Comprehensiveness, Y3: Firm Performance	BI capability improves decision speed and comprehensiveness, which in turn improves firm performance
Beloan et al. (2025)	How strategic management accounting enhances firm performance: the mediating effect of decision-making quality	Quantitative (SEM)	X Strategic Management Accounting; M:Decision-Making Quality; Y:Firm Performance	The quality of decision-making mediates the relationship between strategic management accounting and the performance of small and medium-sized enterprises (SMEs).
Talo et al. (2025)	Systematic Review of Enterprise Resource Planning (ERP) System Implementation in Organizations: Challenges and Successes to Company Performance	Systematic Review	X:ERP Implementation; Y:Company Performance (challenges and successes)	Key barriers include: change resistance, high implementation costs, and data integration challenges
Gessa et al. (2023)	Exploring ERP systems adoption in challenging times	Qualitative (Case)	X:ERP Systems Adoption; context: challenging times	Better decisions in pricing and budgeting lead to improved organizational performance
Jo & Park (2023)	Mechanisms for successful management of enterprise resource planning from user information processing and system quality perspective	Quantitative (Survey)	X1:User Information Processing, X2:System Quality; Y:ERP Management Success	System quality including usability and stability drives decision-making quality
Jovita & Wedari (2024)	Does Enterprise Resource Planning (ERP) Impact on Earnings Quality?	Quantitative (Archival)	X: ERP; Y: Earnings Quality	ERP reduces earnings management practices, which in turn improves financial reporting quality
Kibor (2025)	Influence of ERP-DRIVEN Data Analytics on Strategic Decision-Making in Public Universities in Kenya	Mixed Method	X:ERP-Driven Data Analytics; Y: Strategic Decision Making (Public Universities)	ERP-driven data analytics facilitates strategic decision-making within public universities.
Kishore et al. (2025)	Implementation of Enterprise Resource Planning (ERP) System in Manufacturing Companies: Effect on User Satisfaction and Organizational Performance	Quantitative (Survey)	X: ERP Implementation; Y: User Satisfaction, Organizational Performance	Training quality and interface usability drive user satisfaction and organizational performance
Li et al. (2022)	Evaluating the impact of big data analytics usage on the	Quantitative (Survey)	X:Big Data Analytics Usage; Y:Decision-Making Quality	The use of big data analytics has a positive effect on decision-making quality,

Author(s) & Year	Title	Methode	Variable	Result
	decision-making quality of organizations			with data analytics capabilities serving as a mediating factor.
Mehta (2025)	Beyond Accuracy: Rethinking Data Quality as a Strategic Pillar in ERP Implementation	Conceptual/Empirical	X: Data Quality; context: ERP Implementation	Data quality is a prerequisite for ERP to deliver decision-support value
Morrison et al. (2023)	Decision Support Systems (DSSs) 'In the Wild': The Factors That Influence Users' Acceptance of DSSs in Naturalistic Settings	Qualitative (Case)	X: Factors (user acceptance); Y: DSS Acceptance	Trust and transparency are the key determinants of DSS user acceptance
Neiroukh et al. (2025)	Artificial intelligence capability and organizational performance: unraveling the mediating mechanisms of decision-making processes	Quantitative (SEM)	X:AI Capability; M:Decision-Making Processes; Y:Organizational Performance	AI capabilities enhance both the speed and quality of decision-making, which in turn positively affect organizational performance.
Nour (2023)	The Impact of ERP Systems on Organizational Performance: The Role of Antecedents and Moderators	Quantitative (Survey)	X1:ERP Systems; X2: moderators/antecedents; Y: Organizational Performance	The impact of enterprise resource planning (ERP) systems on organizational performance is influenced by business process reengineering (BPR) and organizational alignment.
Ouiddad et al. (2021)	Assessing the impact of enterprise resource planning on decision-making quality	Quantitative (PLS-SEM)	X: ERP; Y:Decision-Making Quality	System and information quality improve user experience, which enhances decision quality, which ultimately improves organizational performance
Perera et al. (2025)	From Systems to Success: Does Top Management Support Mediate or Moderate ERP-Driven Financial Performance?	Mixed Method	X: ERP; M/Mod: Top Management Support; Y: Financial Performance	The role of top management support as both a mediator and moderator in the relationship between enterprise resource planning (ERP) implementation and financial performance
Putra et al. (2021)	The Influence of Enterprise Resource Planning (ERP) Implementation System on Company Performance Mediated by Organizational Capabilities	Quantitative (SEM)	X: ERP Implementation; M: Organizational Capabilities; Y: Company Performance	ERP adoption strengthens organizational capabilities, which subsequently improve company performance
Samson & Bhanugopan (2022)	Strategic human capital analytics and organisation performance: The mediating effects of managerial decision-making	Quantitative (SEM)	X: Strategic Human Capital Analytics; M: Managerial Decision-Making; Y: Organisation Performance	HR analytics improves managerial decisions, which in turn increases market performance
Zaitar (2022)	Analyzing the Contribution of ERP Systems to Improving the Performance of Organizations	Quantitative (Survey)	X: ERP Systems; Y:Organizational Performance	ERP adoption reduces costs, automates tasks, and raises customer satisfaction
Zvyagin (2024)	Decision Support Systems As A Basis For The Development And Digital Transformation Of Small	Conceptual/Empirical	X:Decision Support Systems (DSS); Y:Development & Digital Transformation of SMBs	DSS improve efficiency in SMEs through integrated analytical models

Author(s) & Year	Title	Methode	Variable	Result
	And Medium-Sized Businesses			
Bai (2024)	Design and Application of Decision Support System for Educational Management Based on Big Data	Design Study	X1: Big Data; X2: Decision Support System Design; Y: Educational Management Performance	Big data-based DSS optimizes resource allocation in educational settings
Coyanda & Agustri (2023)	Decision Support System for Strategic Planning in Educational Organization: A Survey	Quantitative (Survey)	X: Decision Support System (DSS); Y: Strategic Planning in Educational Organizations	DSS supports data-driven strategic planning in educational organizations
Nugraha & Onuegbu (2024)	Healthcare Professionals' Views on Decision Support Systems for Resource Management	Mixed Method	X: Decision Support Systems (DSS); Y:Resource Management (Healthcare)	DSS improves healthcare resource management efficiency
Eidhah Al Shamlan (2025)	Determinants of Decision-Making Effectiveness in Saudi Arabia's Public Sector: The Moderating Role of Organizational Culture	Quantitative (Survey)	X: Determinants of Decision-Making (organizational factors); Z: Organizational Culture; Y: Decision-Making Effectiveness	The moderating role of organizational culture in the relationship between organizational determinants and decision-making effectiveness
Abou-Moghli (2024)	Assessing the relationship between organizational culture and strategic decision-making through the mediating effect of the dynamic environment in the Jordanian ICT industry	Quantitative (SEM)	X: Organizational Culture; M: Dynamic Environment; Y: Strategic Decision-Making	Cultural consistency and adaptability strengthen strategic decision-making
Karim et al. (2023)	Does ERP implementation mediate the relationship between knowledge management and the perceived organizational performance of the healthcare sector? Evidence from a developing country	Quantitative (SEM)	X: Knowledge Management; M: ERP Implementation; Y: Organizational Performance (Healthcare Sector)	The implementation of enterprise resource planning (ERP) systems serves as a mediating factor in the relationship between knowledge management and organizational performance.
Maruf (2025)	A Systematic Review Of Erp-Integrated Decision Support Systems For Financial And Operational Optimization In Global Retails Business	Systematic Review	X:ERP Integrated Decision Support Systems; Y:Financial & Operational Optimization (Global Retail)	The integration of Enterprise Resource Planning (ERP) systems and Decision Support Systems (DSS) improves forecasting accuracy and supports comprehensive financial consolidation.
Sono & Elisabeth (2025)	The Use of ERP in Supporting Managerial Decision Making in Logistics Companies in Cikarang Article Info ABSTRACT	Qualitative (Case)	X: ERP Systems; Y: Managerial Decision-Making (Logistics Companies)	ERP supports managerial decision-making processes in logistics companies
Sunarta & Astuti (2023)	Accounting Information System Quality And Organizational Performance: The Mediating Role Of Accounting Information Quality	Quantitative (PLS-SEM)	X:Accounting Information System Quality; M:Accounting Information Quality; Y:Organizational Performance	AIS quality improves accounting information quality, which in turn improves organizational performance
Bobosatu et al. (2023)	The Data Quality in a Complex Web Based Decision Support System	Design Study	X: Data Quality;	Continuous data quality maintenance is essential for effective web-based DSS

Author(s) & Year	Title	Methode	Variable	Result
			Y: Decision Support System Performance (Web-Based)	
Gupta (2025)	Essential Strategic Factors for Ensuring a Successful ERP Implementation	Conceptual	X: Strategic Factors (critical success factors); Y: ERP Implementation Success	Strategic factors for successful ERP implementation
Darbi & Saleh (2022)	Decision Support System: Analysis And Design Methodology	Conceptual	X: Analysis & Design Methodology; Y: Decision Support System (DSS)	A four-stage DSS methodology framework was developed: problem definition, domain understanding, system analysis, and system design to support decision-making
Yacob et al. (2025)	Exploring the Landscape of Decision Support Systems: A Comprehensive Review of Implementations and Key Characteristics	Systematic Review	X: DSS Characteristics & Implementation Factors; Y: DSS Effectiveness & Landscape	A comprehensive landscape of DSS implementations and key characteristics across various domains
Wijaya et al. (2023)	Modeling the Readiness Measurement for Enterprise Resource Planning System Implementation Success	Quantitative (Survey)	X: Organizational Readiness; Y: ERP System Implementation Success	A readiness measurement model was developed to predict and support ERP implementation success

4. Results and Discussion

4.1. Study Characteristics

Prior to presenting the substantive findings, a review of the literature forming the foundation of this synthesis is warranted. Among the 34 selected articles, several notable patterns emerge. Quantitative methodologies predominate in the reviewed literature. Twenty-four articles employ survey methods in conjunction with statistical analyses, including Structural Equation Modeling (SEM), multiple regression, and path analysis. This methodological preference aligns with the objective of most studies, which was to test causal or mediational relationships between latent variables, such as the effect of ERP on performance as mediated by decision-making quality. 6 articles adopted qualitative approaches, typically conducting in-depth case studies of one or two organizations that had recently implemented ERP or DSS. The remaining 4 articles utilized mixed-methods designs, such as combining surveys with semi-structured interviews to capture contextual nuances not accessible through quantitative data alone.

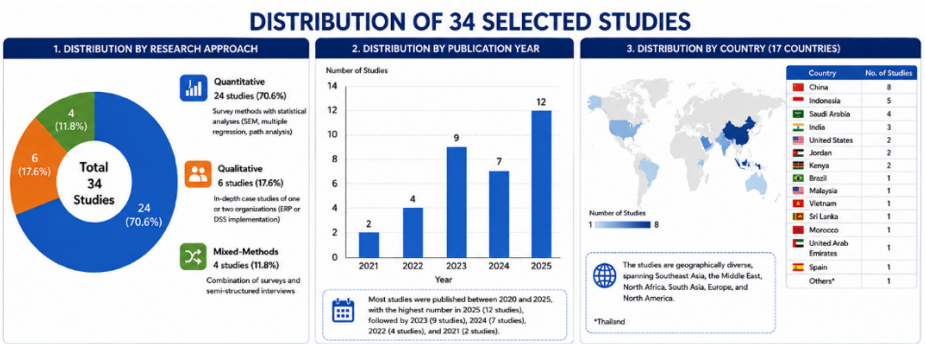

Figure 2. Studies Distribution

Fig. 2. The literature exhibits a wide geographic distribution, with studies originating from Southeast Asia (Indonesia, Malaysia, Vietnam), the Middle East (Saudi Arabia, Jordan, United Arab Emirates), North Africa (Morocco), South Asia (Sri Lanka, India), as well as Europe and North America. This diversity strengthens the analysis by demonstrating that the ERP/DSS–performance relationship is not confined to developed countries with mature infrastructure. Notably, in developing countries, challenges such as organizational readiness and user competency receive particular attention.

The reviewed studies encompass diverse industrial sectors. Manufacturing is the predominant focus, followed by financial services, higher education, healthcare, and retail. This distribution reflects the complexity of supply chains in manufacturing and retail, which benefit significantly from ERP integration. Additionally, healthcare and education sectors are increasingly adopting DSS for resource planning and service personalization.

Most articles were published between 2021 and 2025, reflecting heightened academic interest in this topic following the COVID-19 pandemic. The pandemic's disruption likely prompted organizations to increase their reliance on digital systems for decision-making, which in turn provided researchers with more extensive empirical data.

4.2. Response to Research Question 1: The Impact of ERP and DSS on Organizational Performance

ERP: Operational Efficiency and Transparency. Nearly all studies examining ERP report a positive relationship with performance, both measured financially (profitability, return on assets) and non-financially (customer satisfaction, on-time production). Nour (2023) emphasizes that the effect of ERP on performance is moderated by business process reengineering and organizational alignment; that is, ERP is not a "magic bullet" that works alone, but rather a catalyst that accelerates planned process improvements. Jovita & Wedari (2024) provide more specific evidence: in manufacturing companies listed on the Indonesia Stock Exchange, ERP implementation has been shown to reduce the scope for management to engage in earnings management, thereby improving the quality of financial reports. This finding is important because it highlights a rarely highlighted dimension of governance: ERP not only accelerates but also disciplines. Research (Karim et al., 2023) conducted in the Bangladeshi healthcare sector revealed that ERP acts as a bridge that channels knowledge management practices such as knowledge creation, storage, and dissemination toward improved perceived organizational performance. This finding is interesting because it positions ERP beyond simply being a data integration tool.

Zaitar (2022) concluded that organizations that adopted ERP experienced reduced costs, increased task automation, and higher customer satisfaction. However, he also noted that these effects were stronger in organizations that had been operating for more than five years after implementation, suggesting that ERP benefits are cumulative and take time.

Amid this optimism, several studies have raised concerns. Kishore et al. (2025) found that in Indian manufacturing companies, ERP only improved user satisfaction and performance if accompanied by adequate training and a user-friendly interface. Without this, users felt overwhelmed, and performance stagnated. Talo et al. (2025) in their systematic review added to the list of classic challenges: resistance to change, soaring implementation costs, and difficulty integrating data from legacy systems. These findings teach us that ERP success cannot be judged by whether it is installed or not, but by whether it is accepted by the people who use it daily.

DSS: Speed and accuracy as added value. In the DSS camp, findings are more consistent and less often tinged with critical remarks. Alzghoul et al. (2024) demonstrated that business intelligence capabilities accelerate decision-making and broaden the scope of information considered, thereby boosting company performance regardless of company size. This means that even SMEs can benefit from DSS, provided they have access to the right tools. Neiroukh et al. (2025) confirmed that AI capabilities improve decision speed and quality, although the effect of speed is more dominant. This is interesting: in this fast-paced era, it turns out that "moving first" is often more valuable than "moving best."

In the education sector, Bai (2024) designed a big data-based DSS capable of recommending personalized learning strategies, optimizing resource allocation, and improv

Coyanda & Agustri (2023) comes. Coyanda & Agustri (2023) found similar results in educational institutions: DSS helped leaders design strategic plans based on more robust data, rather than mere intuition. In hospitals, Nugraha & Onuegbu (2024) emphasized that DSS improved resource management efficiency.

Interim synthesis. The evidence reviewed indicates that both ERP and DSS improve organizational performance, although their mechanisms differ. ERP enhances efficiency and operational discipline, while DSS contributes through acceleration and cognitive enrichment. Both, separately and together, strengthen the foundation of an organization.

4.3. Response to Research Question 2: The Mediating Role of Decision-Making Quality

Scientific evidence from ERP (Al-Kahtani et al., 2024) provides the most explicit evidence. In industrial companies in Saudi Arabia, the authors tested a mediation model with three antecedents (ERP, innovation, and strategic planning) and one mediator (strategic decision-making). The results demonstrated that the effect of ERP on organizational performance became insignificant when the mediator was included, indicating full mediation. ERP does not directly influence performance; instead, it enhances managers' strategic decision-making, which subsequently drives organizational performance. This finding aligns with the Resource-Based View, which asserts that resources such as ERP must be transformed into capabilities, such as strategic decision-making, to generate competitive advantage.

(Ouiddad et al., 2021) unraveled the mechanisms at a more micro level. They found that system quality and information quality from ERP improve user experience; positive experiences then improve decision-making quality; and higher-quality decisions lead to higher performance. Interestingly, in this study, service quality had no impact on user experience—a suggestion that Moroccan ERP users may value the system's technical performance over the vendor's after-sales service.

In the realm of management accounting, Beloan et al. (2025) showed that strategic management accounting (often supported by ERP modules) improves decision-making quality in manufacturing SMEs. Gessa et al. (2023) found that better decisions, for example, in pricing, supplier selection, or budget allocation, subsequently improve performance. Samson & Bhanugopan (2022) reported similar findings, albeit in a different context: strategic HR analytics improved managerial decisions, which in turn boosted market performance.

Scientific evidence from DSS (Neiroukh et al., 2025) found that AI capabilities impact organizational performance through two parallel pathways: decision-making speed and decision-making quality. Both are partial mediators, meaning that AI does have a direct effect on performance, but much of its influence is channeled through improvements in managers' cognitive processes. Interestingly, the speed effect is stronger than the quality effect, a finding that may reflect today's market demands that place greater value on rapid response.
(Alzghoul et al., 2024) Complete the picture by showing that business intelligence improves the speed and comprehensiveness of decision-making, and that these two dimensions together drive performance.

A consistent pattern emerges across the literature: ERP and DSS influence both the quality of decision-making and organizational performance. This relationship is observed across diverse countries, sectors, and research methodologies. The robustness of this pattern is supported by its replication in numerous studies employing various approaches. Within the systematic literature review (SLR) tradition, such replication reinforces the conclusion that this is a genuine mechanism rather than a statistical artifact.

The analysis indicates that not all studies explicitly employ the term "mediation." Several studies, particularly qualitative ones, describe similar mechanisms using phrases such as "ERP promotes data-driven decision-making" or "DSS strengthens the evidence base for strategic decisions." Even in the absence of path coefficients and Sobel tests, these narratives consistently suggest that information systems enhance cognitive processes prior to action, and these improvements ultimately generate value.

4.4. Response to Research Question 3: Moderating Factors

First, top management support. This is the factor most frequently mentioned in the literature, and for obvious reasons. Without leadership support, ERP or DSS projects lose sponsorship, budget, and legitimacy preventing successful implementation and reducing project momentum. Perera et al. (2025) found that in a Sri Lankan garment company, top management support not only moderated but also partially mediated the relationship between ERP and financial performance. This means that ERP encourages leadership to be more involved (because data is now available in real time), and that involvement then drives performance. Talo et al. (2025) add that leadership support must be concrete: attendance at important meetings, providing a budget for training, and being a role model in using the system. Verbal support without action is counterproductive because it can foster cynicism among employees and undermines trust in the project.

Second, organizational culture. Transitioning from leadership, it is clear that culture is not just a slogan; it is a deeply rooted pattern of behavior. Al Shamlan (2025) demonstrated that in the Saudi Arabian public sector, a collaborative and innovative culture strengthens the relationship between organizational determinants and decision-making effectiveness. In such a culture, employees feel safe sharing information, admitting mistakes, and proposing new ideas all behaviors essential for quality decision-making. Conversely, hierarchical and bureaucratic cultures tend to hinder the flow of information. Subordinates are reluctant to deliver bad news, and leaders make decisions based on incomplete information. (Abou-Moghli, 2024) in Jordan emphasized two of the most relevant cultural dimensions: consistency (the ability to maintain stability) and adaptability (the agility to respond to change). Both, when balanced, create an ideal environment for data-driven decision-making.

Third, system and data quality. Building on the foundation of culture, this is the technical base that enables change. (Jo & Park, 2023) identified three pillars of ERP system quality: ease of use, stability, and user participation in development. A complex system that frequently crashes will only drive users back to old methods (spreadsheets and email), wasting investment. (Sunarta & Astuti, 2023) A study at a rural bank in Bali showed that the quality of the accounting information system improves the quality of accounting information, which in turn improves organizational performance. This is a perfect example of the domino effect: a good system produces clean data, and sound decisions lead to superior performance.

Mehta (2025) sounds the starkest warning: without adequate data quality, the full potential of ERP will die before it can be fully realized. He cites customer data duplication, entry errors, and formatting inconsistencies as "silent poisons" that erode user trust in the system. Once users lose trust, they rely on intuition, and the organization is no better off than it was before the ERP system was implemented. (Bobosatu et al., 2023) adds another dimension: in complex web-based DSS, data quality must be maintained continuously, not just during implementation. Stale or incomplete data will result in misleading recommendations.

Fourth, user competence and training. After ensuring system quality, attention must also be paid to users, as technology is merely a tool; it is the user who determines the final outcome. Kibor (2025) studied public universities in Kenya and found that ERP user competency was a determining factor in whether analytical data was actually used for strategic decisions or simply served as dashboard decoration. Many universities had purchased ERP, but few had staff capable of mining the data and presenting it in a format ready for management meetings. Kishore et al. (2025) in India emphasized the importance of friendly and ongoing training. One-time training during go-live is not enough; users need mentoring, Q&A forums, and follow-up training modules.

The competencies required are not only technical (how to click and fill out forms), but also conceptual (understanding how the data generated by the system can answer business questions). A finance manager who is proficient in using ERP modules but doesn't understand how the numbers on the screen can help with investment decisions is a classic example of a competency gap. Therefore, training programs ideally combine both aspects.

Interaction between moderators. The four moderators mentioned above do not work in isolation. Top management support, for example, is often a prerequisite for budget allocation for training (the fourth moderator) and investment in data quality (the third moderator). Organizational culture (the second moderator) influences the extent to which users feel safe

admitting that they are not yet proficient in using the system, thus opening the door to training. Thus, these four moderators form an ecosystem.

5. Discussion and Implications

5.1. Theoretical Implications

This systematic literature review (SLR) advances the Resource-Based View by demonstrating that information technology (IT) resources, specifically enterprise resource planning (ERP) and decision support systems (DSS), generate organizational value primarily by enhancing decision-making capabilities rather than through direct operational effects. This result aligns with Dynamic Capabilities theory (Samson & Bhanugopan, 2022), which posits that the ability to sense, seize, and reconfigure resources underpins sustained competitive advantage.

The four moderating factors identified in this review introduce additional nuance to the mediation model. The relationship between ERP or DSS, decision quality, and organizational performance depends on specific organizational and technical conditions. Future theoretical models should explicitly incorporate these boundary conditions when analyzing IT-performance relationships.

5.2. Managerial Implications

This review provides three actionable recommendations for practitioners. First, IT investment strategies should be reframed so that ERP and DSS are regarded as catalysts for enhancing decision-making capabilities, rather than solely as tools for operational efficiency. Implementation plans should incorporate explicit milestones for improving decision quality in addition to operational metrics.

Second, the four moderators identified in this review constitute a readiness checklist. Organizations planning ERP or DSS implementation should assess top management commitment, openness to data-driven approaches, data quality, and user competency. Any deficiencies in these areas should be addressed prior to implementation, rather than after issues arise.

Third, ERP benefits tend to accumulate over time (Zaitar, 2022). Organizations are advised to adopt a long-term perspective on IT investment and to resist pressure for immediate returns. Monitoring decision-quality metrics can provide early indicators of future performance improvements.

5.3. Limitations

Several limitations of this systematic literature review should be acknowledged. First, heterogeneity in the operationalization of variables across studies, including variations in scales, contexts, and definitions of 'decision-making quality' and 'organizational performance,' prevented the implementation of a formal quantitative meta-analysis. Second, the review is affected by publication bias, as studies with significant positive findings are more likely to be published, potentially leading to an overestimation of the relationship between ERP or DSS and organizational performance. Third, the geographic concentration of studies in Southeast Asia and the Middle East limits the generalizability of the findings to other regions. Fourth, the rapid pace of technological advancement indicates that studies conducted before 2022 may not fully capture the capabilities of current AI-integrated ERP and DSS platforms.

6. Conclusion

This systematic review, synthesizing findings from 34 empirical articles published between 2021 and 2025, demonstrates that Enterprise Resource Planning (ERP) and Decision Support Systems (DSS) exert a meaningful positive impact on organizational performance through both direct and indirect mechanisms. ERP systems primarily enhance operational efficiency and discipline, while DSS strengthens the cognitive processes underlying managerial decision-making. Crucially, decision-making quality characterized by speed, accuracy, and completeness of information serves as a significant mediator in this relationship, a pattern observed consistently across diverse countries, sectors, and methodological approaches.

The strength of this mediation is further shaped by four interrelated moderators: top management support, adaptive organizational culture, system and data quality, and user competence. These factors do not operate in isolation but rather constitute an interconnected ecosystem that must be addressed holistically within implementation strategies. Theoretically, these findings extend the Resource-Based View by demonstrating that information technology generates organizational value primarily through enhanced decision-making capabilities rather than through efficiency gains alone. In practice, ERP and DSS should therefore be positioned as catalysts for building strategic decision-making competencies, necessitating concurrent investment in human resource development, organizational culture, and data quality assurance.

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