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Success Factors of Knowledge Management Systems in Technology-Based Organizations: A Systematic Literature Review

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ABSTRACT

Knowledge Management Systems (KMS) play a strategic role in enhancing organizational performance, innovation, and competitiveness in technology-based organizations. This study aims to identify critical success factors, implementation challenges, organizational impacts, and emerging trends of KMS through a Systematic Literature Review (SLR) combined with bibliometric analysis. This review follows the PRISMA framework using the Scopus database as the primary source. A total of 3,373 records were initially identified from Scopus, resulting in 55 eligible journal articles and 15 selected studies for in-depth qualitative analysis. Bibliometric analysis was conducted using VOSviewer to examine publication trends, keyword co-occurrence, and thematic research clusters. The findings indicate that KMS success is strongly influenced by strategic alignment, top management support, organizational culture, employee engagement, technology infrastructure, and knowledge quality. The study also reveals that recent KMS research increasingly emphasizes socio-technical integration, user-centric approaches, cloud-based systems, and sector-specific implementation frameworks. In contrast to previous KMS reviews that primarily focused on the technological dimension, this study provides an integrated perspective by combining bibliometric mapping and thematic synthesis to highlight the interactions between organizational, technological, and human factors in technology-based organizations.

1. Introduction

In technology-based organizations, the implementation of Knowledge Management Systems (KMS) plays an important role in improving organizational performance and maintaining competitive advantage. The success of KMS implementation is influenced by several interrelated critical success factors (CSFs), including organizational culture, top management support, employee involvement, technological infrastructure, and knowledge quality. A collaborative organizational culture and active knowledge-sharing practices have been shown to improve KMS effectiveness, while low trust and resistance to knowledge sharing may reduce system benefits [1]. In addition, strong managerial support contributes to resource allocation, strategic alignment, and the encouragement of KMS adoption across organizational units [2], [3]. Employee engagement, supported by continuous training, also plays a crucial role in increasing user competence and the effectiveness of system utilization [4], [5]. From a technological perspective, a reliable and integrated IT infrastructure enables effective knowledge acquisition, storage, and distribution processes, particularly in dynamic and knowledge-intensive environments [6], [7]. Furthermore, high-quality knowledge content supports decision-making processes and organizational innovation [8]. Despite the growing body of KMS literature, previous studies have generally focused on isolated organizational or technological factors, while limited attention has been given to the integrated interaction between technological, organizational, and human dimensions, specifically within technology-based organizations. Therefore, this study seeks to provide a comprehensive understanding of KMS success factors through a systematic literature review combined with bibliometric analysis.

From a technological perspective, a reliable and integrated IT infrastructure is the foundation for effective knowledge acquisition, storage, sharing, and dissemination, particularly in dynamic, technology-driven organizational environments [6], [7]. Furthermore, the quality of relevant, accurate, and up-to-date knowledge content significantly influences system usage and supports organizational decision-making and innovation processes [3], [9]. Beyond internal organizational factors, KMS success is also shaped by external factors such as market competition, digital transformation, and organizational readiness, which require organizations to manage knowledge adaptively and respond effectively to changing business environments [10], [11], [12]. Therefore, a holistic approach that integrates technological, organizational, strategic, and human dimensions is essential to ensure the successful implementation of KMS in technology-based organizations [13].

Unlike general organizational contexts, technology-based organizations operate in highly dynamic, innovation-driven, and knowledge-intensive environments where rapid information exchange, digital collaboration, and continuous learning are essential. These organizations rely heavily on technological infrastructure, distributed knowledge systems, and agile decision-making processes, making the implementation of KMS more complex and strategically significant. Therefore, the critical success factors of KMS in technology-based organizations may differ from those identified in conventional organizational settings, particularly regarding technological integration, organizational adaptability, data security, and employee digital readiness [6], [7], [9].

Unlike previous systematic reviews that primarily focused on isolated KMS success factors or specific organizational settings, this study integrates bibliometric analysis and systematic literature review to examine the multidimensional interaction between technological, organizational, and human factors within technology-based organizations. The study also highlights the recent evolution of KMS research toward socio-technical and human-centered approaches, which remain underexplored in previous reviews.

2. Methods

This study uses a Systematic Literature Review (SLR) combined with bibliometric analysis to comprehensively examine the success factors of Knowledge Management Systems (KMS) in technology-based organizations [13]. This approach was chosen because it can synthesize empirical and conceptual findings across studies while mapping the development, patterns, and intellectual structure of KMS research. In line with the recent evolution of KMS studies that increasingly emphasize the integration of technological, organizational, and human factors, the SLR approach is considered appropriate for identifying dominant themes, research gaps, and emerging directions in KMS development within technology-based organizations [6], [8].

The bibliometric approach was used to quantitatively analyze scientific publications to identify research trends, influential studies, author collaboration patterns, and dominant themes in the field of KMS. To ensure transparency, accuracy, and replicability of the research, the literature review process followed established systematic review guidelines, specifically the PRISMA framework, which provides structured procedures for the stages of identification, screening, eligibility assessment, and determination of literature to be included. The application of this systematic approach enables comprehensive mapping of KMS literature while minimizing study selection bias, as recommended in previous SLR methodological studies [2], [5], [13].

The literature search process was conducted through reputable academic databases with the following inclusion criteria: (1) peer-reviewed journal articles published up to 2025, (2) publications in English, and (3) studies that explicitly discuss Knowledge Management Systems, success factors, or KMS implementation in the context of technology-based organizations. Studies that did not highlight organizational, technological, or human resource aspects in KMS were excluded to maintain the relevance of the analysis. The literature selection process also involved backward and forward citation chaining to ensure that fundamental works and relevant recent research were not overlooked [5], [10].

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Although the bibliometric analysis was conducted on the entire collection of articles identified from Scopus, the in-depth qualitative analysis was limited to a selected subset of articles. This subset consisted of fifteen articles with the highest number of citations, representing the most influential and widely discussed studies in the field of KMS. Citation-based selection was applied to ensure that the qualitative synthesis focused on the most influential and frequently referenced studies in the KMS literature.

Bibliometric analysis was conducted using VOSviewer, which enables the visualization and analysis of bibliographic data, including citation networks, author collaboration patterns (co-authorship), and keyword co-occurrence. This analysis identified influential authors, core journals, major research clusters, and emerging themes in the study of KMS success factors. In addition, keyword co-occurrence analysis revealed dominant dimensions, such as organizational culture, leadership support, technological infrastructure, data security, employee engagement, and strategic alignment, that consistently emerged in KMS studies.

To complement the bibliometric findings, a qualitative synthesis was conducted through a systematic literature review to interpret and integrate empirical findings from previous studies. This synthesis confirms that the success of KMS is not only determined by the quality of the system and technological infrastructure but is also greatly influenced by leadership support, a conducive organizational culture, and employee involvement in knowledge sharing. In addition, data security is increasingly recognized as an important component in the success of KMS, especially in technology-based organizations facing increased cybersecurity risks [7]. Thus, the integration of bibliometric analysis and systematic review provides a comprehensive and robust overview of the KMS research landscape and supports the identification of key factors and research gaps in the implementation of Knowledge Management Systems in technology-based organizations [6], [10]. The article selection process was conducted systematically using the PRISMA framework. Figure 1 illustrates the stages of identification, screening, eligibility assessment, and final inclusion of the selected articles.

Based on a search conducted in the Scopus database on January 24, 2026, the initial query using the keyword phrase “Success Factor of Knowledge Management System” across article titles, abstracts, and keywords returned approximately 3,373 records published between 1965 and 2025. To improve search specificity and relevance, the search query was refined using Boolean operators and exact keyword matching with the following syntax:

TITLE-ABS-KEY (“Success Factor” AND “Knowledge Management System”)

The refined search produced 123 records. Subsequently, the screening process was carried out based on document type by excluding conference papers (42), book chapters (16), conference reviews (5), and review papers (3). After document-type screening, 57 journal articles remained eligible for further analysis. Next, non-English publications were excluded, resulting in a final pool of 55 English-language scientific journal articles.

Following the eligibility screening, 15 articles were selected for in-depth qualitative review. The final sample consisted of the 15 most-cited journal articles to ensure the inclusion of influential and foundational studies related to KMS success factors in technology-based organizations. These selected articles were then analyzed systematically to address the proposed research questions.

To ensure the relevance and influence of the selected studies, the final review focused on the 15 most-cited journal articles identified after the screening process. Citation frequency was used as the primary selection criterion because highly cited articles are generally considered influential and foundational within the KMS research domain. In addition, all selected studies were examined for their relevance to the proposed research questions and their contribution to understanding KMS success factors in technology-based organizations.

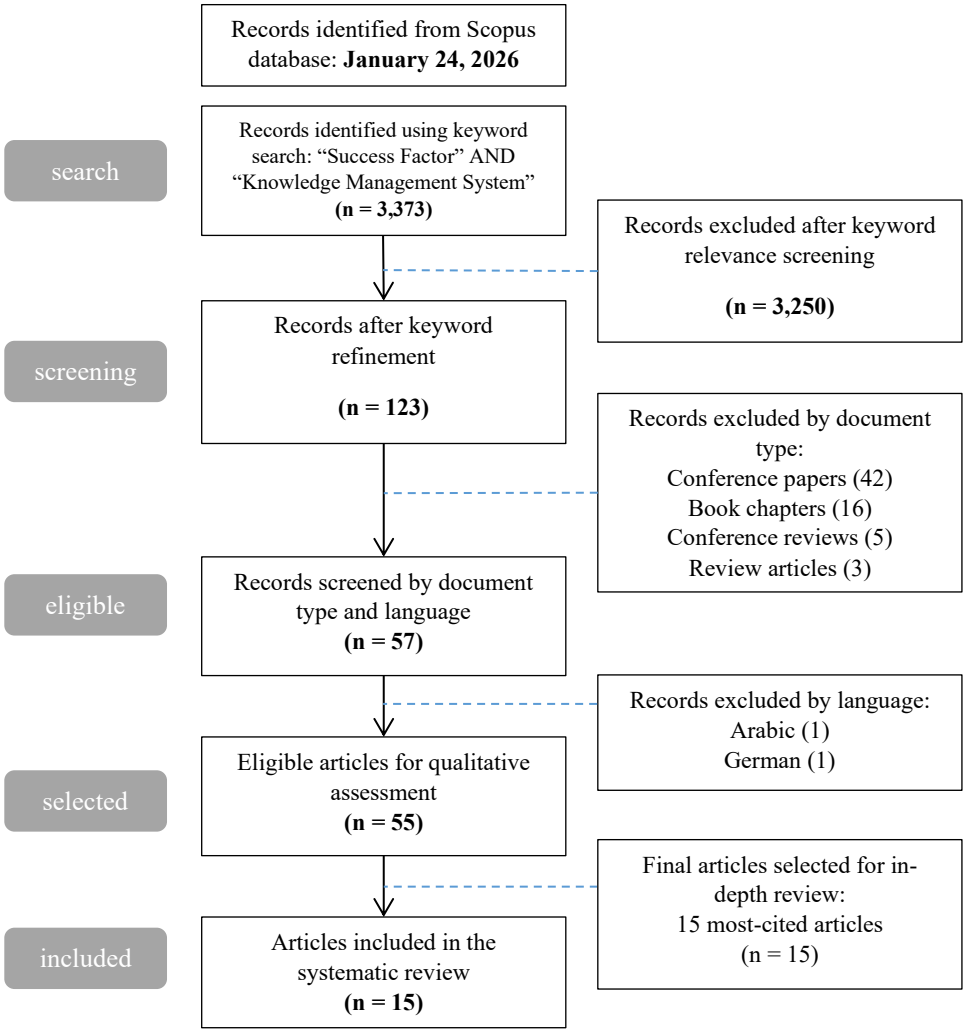

Figure 1. PRISMA Flow Diagram of the Article Selection Process

i. RQ1: What factors influence the successful implementation of a Knowledge Management System in technology-based organizations?
ii. RQ2: How does the implementation of KMS impact organizational performance and business innovation?
iii. RQ3: What are the main challenges in the implementation and adoption of KMS in organizations?
iv. RQ4: How do employee engagement and organizational culture affect the effectiveness of KMS?
v. RQ5: What are the latest trends in the development and utilization of KMS in technology-based organizations?

3. Results and Discussions

The results of this study focus on findings from 15 articles in the Scopus database on the success factors of knowledge management systems in the context of technology-based organizations. This data is sourced from the identification of the number of articles published, publications per year, and journal sources. This study will also highlight the most influential elements in the success factors in the implementation of Knowledge Management Systems, including authors, affiliations, and countries involved.

The analysis is based on the bibliometric characteristics of publications, which include the number and trends of publications per year, journal sources, and the distribution of authors and institutional

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affiliations. In addition, this study identifies the most influential authors, affiliations, and countries in the development of KMS success factor studies, in order to map the intellectual structure and geographical contributions in this field.

Furthermore, the results of the study also highlight the main themes and research clusters that emerge from the co-occurrence analysis of keywords, which represent the dominant dimensions in the successful implementation of KMS, such as organizational factors, technology, human resources, and strategic alignment. To complement these bibliometric findings, a qualitative synthesis of selectively chosen core articles was conducted, enabling a more in-depth discussion of the mechanisms, impacts, and challenges of KMS implementation. With this approach, the Results and Discussion section not only presents a quantitative overview of KMS research developments but also integrates conceptual interpretations relevant to the context of technology-based organizations.

3.1. Results

a. Publication Trends in KMS Research

The number of publications shows a fluctuating pattern from year to year, with several periods of significant increase and decrease. This pattern reflects the dynamics of research interest in KMS, which is influenced by technological developments, changes in the organizational context, and shifts in research focus in the field of information systems and knowledge management. The trend of research publications related to the success factors of Knowledge Management Systems (KMS) based on Scopus-indexed articles during the observation period is shown in Figure 2.

In the early phase, the number of publications was relatively limited and unstable, indicating that studies on KMS success factors were still exploratory in nature. Subsequently, there was a surge in publications in the middle of the observation period (2006), indicating increased academic attention to KMS implementation in line with the development of information technology and the increasing need for technology-based organizations to manage knowledge systematically. However, after that period, the number of publications fluctuated again, with some years showing a decline before increasing again in the more recent period, around 2020.

This fluctuation indicates that research on KMS success factors is contextual and responsive to changes in the technological and organizational environment, rather than developing linearly. Nevertheless, the consistent presence of publications throughout almost the entire observation period shows that the topic of KMS success factors remains relevant and sustainable in the literature. This trend confirms that KMS continues to be viewed as an important area of research, especially in the context of technology-based organizations facing the challenges of digital transformation, innovation, and long-term knowledge management. To identify the development of KMS research over time, publication trends were analyzed based on the number of articles published annually. Figure 2 shows the fluctuation of publications related to KMS success factors in technology-based organizations.

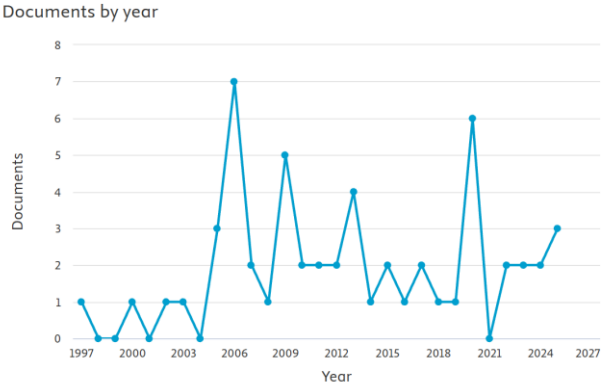

Figure 2. Trends in research publications related to KMS

As shown in Figure 2, the number of publications fluctuated across the observed period, indicating varying research interest in KMS implementation and success factors. However, an increasing trend can still be observed in recent years, particularly after 2021, reflecting growing attention toward digital transformation and knowledge-driven organizational strategies.

The bibliometric analysis also identified the most productive journals contributing to the development of KMS research. As shown in Table 1, the *Journal of Knowledge Management* and the *International Journal of Knowledge Management* were among the most dominant publication sources, indicating their important role in shaping discussions related to KMS success factors, organizational learning, and knowledge-sharing practices in technology-based organizations.

Table 1. Most Productive Journals in KMS Research

No.	Journal	Number of Articles	Research Focus
1	Journal of Knowledge Management	4	Knowledge management frameworks, organizational culture, and strategic KM implementation
2	International Journal of Knowledge Management	3	KMS success models, system effectiveness, and organizational learning
3	Heliyon	2	KMS success factors and organizational performance
4	Knowledge Management Research & Practice	2	Critical success factors and KMS implementation practices
5	European Journal of Innovation Management	1	Socio-technical perspectives and digital transformation

b. Geographic Distribution

This analysis aims to map global contributions to KMS research. The results show that research on KMS success factors is dominated by contributions from countries with established technology and research ecosystems. Figures 3 and 4 show the distribution of countries of origin of publications, indicating a concentration of research in certain regions, such as the United States, Malaysia, Iran, and India. However, these findings also indicate opportunities for increased research contributions from developing countries, particularly in the context of technology-based organizations and small and medium-sized enterprises (SMEs). This analysis provides insights into the global research landscape and highlights regions with strong academic interest in Knowledge Management Systems. Figure 3 illustrates the geographic distribution of research publications related to KMS.

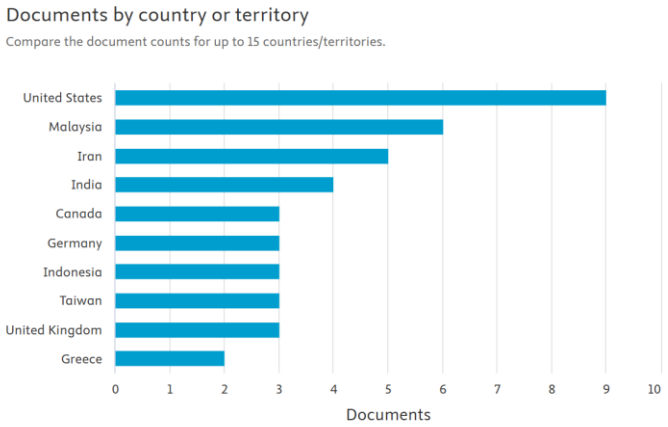

Figure 3. Geographic distribution of research publications related to KMS

As shown in Figure 3, KMS research is distributed across various countries, with higher publication concentrations observed in regions characterized by strong technological development and digital transformation initiatives. This indicates that the implementation and study of KMS are closely associated with knowledge-intensive and technology-driven organizational environments.

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c. Keyword Co-occurrence and Research Clusters

Keyword co-occurrence analysis using VOSviewer was conducted to identify the main themes and research clusters in the study of KMS success factors. The analysis grouped related keywords into several research clusters representing major topics discussed in the literature. Table 2 presents the research clusters generated from the keyword co-occurrence analysis.

Table 2. Keyword Co-occurrence Analysis and Research Clusters

Cluster	Main Theme	Dominant Keywords	Occurrences	Total Link Strength (TLS)	Interpretation
Cluster 1 (1 keyword)	Knowledge Management Core Concepts	knowledge management	38	88	Represents the central concept of KMS studies and indicates that knowledge management remains the dominant foundation in technology-based organizational research.
Cluster 2 (2 keywords)	Knowledge Management Systems Implementation	knowledge management system; knowledge management systems	26; 17	83; 40	Highlights research focusing on KMS implementation, integration, and operational application within organizations.
Cluster 3 (2 keywords)	Knowledge-Based Organizational Systems	knowledge-based systems	15	61	Reflects studies emphasizing system-based approaches for organizational knowledge processing and decision support.
Cluster 4 (1 keyword)	Knowledge Acquisition and Sharing	knowledge acquisition	7	32	Indicates the importance of capturing, storing, and distributing organizational knowledge effectively.
Cluster 5 (4 keywords)	Critical Success Factors and Strategy	critical success factor; critical success factors; key success factors; success factors	5; 6; 5; 5	23; 16; 18; 18	Demonstrates strong attention toward identifying organizational, managerial, and technological determinants influencing KMS success.
Cluster 6 (2 keywords)	Technology and Competitive Environment	information technology; competition	7; 5	19; 19	Shows that technological capability and competitive business pressure are important drivers of KMS adoption and effectiveness.
Cluster 7 (2 keywords)	Methodological and Performance Perspective	design/methodology/approach; knowledge management success	5; 6	25; 22	Represents methodological discussions and the evaluation of KMS effectiveness and organizational outcomes.

Table 1 shows that “knowledge management” and “knowledge management system” are the most dominant keywords, with the highest occurrence frequencies and total link strengths. This finding

indicates that KMS research is strongly centered on organizational knowledge processes and system implementation. In addition, keywords related to critical success factors, information technology, and knowledge acquisition demonstrate strong conceptual relationships, suggesting that technological capability, organizational strategy, and knowledge-sharing practices remain central themes in the KMS literature.

The analysis results show that KMS research is grouped into several dominant thematic areas representing the major dimensions of KMS implementation and success. The most prominent themes include knowledge management systems, critical success factors, knowledge acquisition, information technology, and organizational competitiveness. The high occurrence frequencies and total link strengths of keywords such as *knowledge management* and *knowledge management system* indicate that the literature is strongly focused on organizational knowledge processes and system implementation. In addition, the interrelationship among keywords related to technology, organizational strategy, and success factors suggests that KMS effectiveness depends on the integration of technological, organizational, and managerial dimensions. Keyword co-occurrence analysis was performed using VOSviewer to identify dominant themes and conceptual relationships among research topics. Figure 4 visualizes the research clusters and keyword connections in KMS studies.

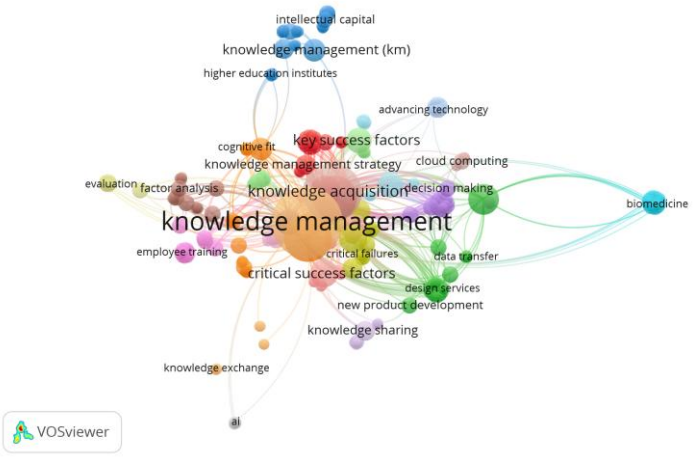

Figure 4. Keyword Co-occurrence and Research Clusters Visualization (VOSviewer)

3.2. Discussion

This section aims to interpret and synthesize the research findings in order to answer the five research questions (RQ1–RQ5) that were posed. Unlike the descriptive results section, this discussion places the bibliometric findings and literature synthesis in a broader theoretical and practical context related to the successful implementation of Knowledge Management Systems (KMS) in technology-based organizations.

Based on an analysis of 15 Scopus-indexed articles, this discussion integrates two main layers of findings, namely (1) research patterns and structures identified through bibliometric analysis, and (2) conceptual and empirical findings obtained from a qualitative synthesis of core articles. This approach allows for a more comprehensive understanding of the factors that influence the success of KMS, its impact on organizational performance and innovation, the implementation challenges faced, and the role of employee engagement and organizational culture in determining the effectiveness of KMS.

Specifically, this discussion outlines how organizational, technological, and human factors interact to support the successful implementation of KMS (RQ1), as well as how the application of KMS contributes to improved organizational performance and business innovation (RQ2). Furthermore, the discussion addresses the main challenges that arise in the implementation and adoption of KMS, including cultural barriers, user resistance, and system limitations (RQ3). The central role of employee engagement and organizational culture in moderating and strengthening the effectiveness of KMS is

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also analyzed in depth (RQ4). Finally, the discussion links these findings to the latest trends in KMS development and utilization, which show a shift towards socio-technical approaches, smart technology integration, and value-based strategic orientation (RQ5).

By linking the research findings to existing literature, this discussion section not only strengthens the conceptual understanding of KMS success but also highlights the theoretical and practical implications for technology-based organizations in designing, implementing, and utilizing KMS sustainably. Table 3 presents a synthesis of findings derived from the selected studies based on each research question. The table summarizes the representative studies, research contexts, methods, major findings, and limitations identified in the literature regarding KMS implementation in technology-based organizations.

Table 3. Synthesis of Findings Based on Research Questions

RQ	Representative Studies	Research Context	Method	Key Findings	Limitations
RQ1: What factors influence successful KMS implementation?	Abu-AlSondos (2023); Haug (2024); Cheak et al. (2022)	Technology-based organizations, the manufacturing industry, and SMEs	Empirical study, survey, literature review	KMS success is influenced by organizational culture, leadership support, IT infrastructure, employee engagement, and strategic alignment.	Most studies focus on specific sectors and lack cross-industry comparison.
RQ2: How does KMS implementation impact organizational performance and innovation?	Yasir et al. (2025); Thomas (2024); Agnes et al. (2023)	Technology companies and SMEs	Case study and SLR	KMS improves organizational learning, decision-making quality, operational efficiency, and innovation capability.	Limited longitudinal evidence regarding long-term organizational impact.
RQ3: What are the main challenges in KMS implementation and adoption?	Ali et al. (2024); Abu-AlSondos (2023); Haug (2024)	Public sector, technology-intensive organizations	Empirical survey and conceptual analysis	Major challenges include resistance to knowledge sharing, weak organizational culture, unclear implementation strategy, and inadequate system quality.	Most studies rely on self-reported organizational data.
RQ4: How do employee engagement and organizational culture influence KMS effectiveness?	Abu-AlSondos (2023); Cheak et al. (2022); Thomas (2024)	Organizations adopting digital knowledge systems	Survey and socio-technical analysis	Organizational culture and employee participation significantly influence KMS adoption, collaboration, and knowledge-sharing behavior.	Human behavioral factors are difficult to generalize across cultures.
RQ5 What are the latest trends in KMS	Younas et al. (2022); Haug (2024)	High-tech organizations and digital environments	Review and framework studies	Recent trends emphasize cloud-based KMS, human-centered	Emerging technologies such as AI-driven KMS are

development and utilization?	approaches, cybersecurity integration, and sector-specific KMS frameworks.	still underexplored.

RQ1: What factors influence the successful implementation of a Knowledge Management System in technology-based organizations?

The successful implementation of a Knowledge Management System (KMS) in technology-based organizations is a crucial factor in utilizing knowledge as a strategic asset of the organization [10]. Although various studies identify diverse factors, there are several key elements that consistently emerge as major determinants of KMS success [3], [9], [13]. These factors can generally be categorized into five major dimensions: strategic alignment and management support, organizational culture and human factors, processes and methodologies, technology and IT infrastructure, and training and organizational aspects.

From a strategic perspective, the success of KMS is strongly influenced by the alignment between knowledge management strategies and overall organizational objectives. Organizations that integrate KMS initiatives into their strategic direction tend to achieve more effective knowledge utilization and long-term sustainability [6]. In addition, active support from senior management is recognized as one of the most significant managerial factors, particularly in providing resources, legitimizing policies, and promoting the role of knowledge champions who encourage continuous KMS implementation [2], [4]. The establishment of clear and measurable KM project objectives also contributes substantially to implementation success by ensuring that KMS initiatives are aligned with organizational priorities and performance targets [3].

In terms of organizational culture and human factors, a culture that encourages learning, collaboration, and knowledge sharing is consistently identified as a fundamental prerequisite for KMS effectiveness [1]. Organizational cultural background influences the extent to which employees accept, trust, and actively utilize KMS platforms [1]. Furthermore, the development of a learning organization and employee empowerment practices has been shown to enhance organizational performance through more effective knowledge management activities [1], [3]. Several studies also emphasize the importance of incentives and motivational mechanisms to encourage participation in knowledge-sharing activities and reduce organizational resistance to KMS adoption [5].

From a process and methodological perspective, successful KMS implementation requires systematic and structured knowledge management processes, including knowledge identification, codification, documentation, storage, retrieval, and dissemination [2], [9]. Standardized knowledge delivery processes, mechanisms for capturing tacit knowledge, and the development of accessible knowledge repositories and knowledge maps significantly contribute to improving KMS effectiveness and usability [6]. Moreover, the organization's ability to identify and manage strategic knowledge assets remains essential for sustainable KMS adoption and organizational learning [10].

In the technological dimension, robust IT infrastructure and reliable KMS platforms are considered foundational requirements for successful implementation [1], [4], [6]. Technology enables organizations to manage knowledge acquisition, storage, retrieval, and dissemination more efficiently, especially within dynamic and knowledge-intensive environments. However, the literature also emphasizes that a purely technology-driven approach is insufficient for ensuring KMS success. Instead, technological capabilities must be integrated with organizational processes, leadership support, and organizational culture to maximize the effectiveness of knowledge management initiatives [7].

Finally, training and organizational support also play critical roles in the long-term sustainability of KMS implementation. Continuous KMS training enhances user competencies, improves system acceptance, and encourages more effective utilization of knowledge resources [3], [4]. Adaptive

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organizational structures and flexible internal processes further support KMS integration within daily organizational activities and facilitate continuous knowledge exchange [6]. Overall, the successful implementation of KMS in technology-based organizations requires a holistic and integrated approach that combines strategic, cultural, technological, process-oriented, and human resource dimensions.

RQ2: How does the implementation of KMS impact organizational performance and business innovation?

Successful KMS implementation has been proven to contribute to organizational performance improvement through several measurable indicators, including operational efficiency, knowledge-sharing effectiveness, decision-making quality, employee collaboration, and innovation capability [8], [10], [13]. Agnes et al. (2023) found that KMS adoption in SMEs improved organizational learning processes and enhanced knowledge dissemination through training, repositories, and collaborative activities. Similarly, Yasir et al. (2025), in a technology company context, reported that KMS implementation improved decision-making speed, workflow efficiency, and organizational productivity. In addition, Alam et al. (2025) emphasized that KMS contributes to organizational competitiveness by strengthening knowledge integration and supporting innovation-oriented environments.

The use of KMS directly contributes to improving organizational effectiveness, both in large companies and small and medium-sized enterprises (SMEs) [8], [10]. This system enables a more systematic dissemination of knowledge across units, projects, and work teams, thereby improving the quality of decision-making and organizational productivity [1], [6].

Improvements in organizational performance through KMS are greatly influenced by the role of organizational learning. For KM to have a significant impact on business performance, the system must be able to facilitate personal relationships between experts and knowledge users, provide a knowledge database, and build working mechanisms that convert individual experiences into collective learning assets [6]. Strong organizational learning increases the chances of KM success and encourages higher performance.

In addition, human and organizational culture factors play a central role in maximizing the benefits of KMS. Employee engagement has a substantial positive impact on the success of the system, especially in promoting the active adoption and utilization of KMS [1]. A corporate culture that supports collaboration, empowerment, and openness to change is an important foundation for improving KM performance and organizational adaptability [13]. Top management support, including strong leadership, provision of training, and clarity of implementation objectives, further strengthens the effectiveness of KM in improving organizational performance [2], [4].

Although the reviewed literature does not always explicitly measure “business innovation” as a direct outcome of KMS implementation, several studies indicate that KMS may indirectly support innovation-related activities and organizational adaptability [9]. Increased knowledge sharing and collaborative organizational cultures are associated with the emergence of new ideas, creative problem-solving, and improvements in work processes and product development [1], [9]. Furthermore, increasing organizational pressure to manage and apply knowledge more effectively has encouraged the broader adoption of KM and KMS practices, which may contribute to organizational competitiveness and long-term sustainability [4], [6]. Therefore, the findings suggest that KMS can serve as a supporting mechanism for innovation and competitive advantage, although the direct relationship between KMS implementation and business innovation remains insufficiently explored in the current literature.

RQ3: What are the main challenges in implementing and adopting KMS in organizations?

Although KMS offers various strategic benefits, organizations still face several significant challenges in the implementation and adoption process, whether they originate from organizational, cultural, or technical factors [10], [13]. One of the main challenges is understanding the complex context and culture of the organization, which requires structural and behavioral changes to align with knowledge management practices [1], [6]. Cultural barriers frequently trigger resistance to knowledge

sharing and reuse practices, influenced by factors such as additional workload, privacy concerns, job insecurity, and low perceived value of the system.

In addition, the lack of top-down management support and unclear implementation objectives are major factors hindering the success of KMS [2], [9], [13]. Without strong leadership and alignment with organizational strategy, KMS initiatives risk losing direction and internal legitimacy [3]. From a technical perspective, challenges include the inability of implementation methodologies to fully address user needs, limitations in access management and knowledge utility, and suboptimal KMS system quality, all of which can reduce system usability and adoption rates [3], [8].

To overcome these challenges, the literature emphasizes the importance of implementing a systematic formal process, developing a reliable IT infrastructure, and establishing an organizational culture that supports flexibility, communication, and collaboration [6], [9], [10]. Employee motivation, knowledge content quality, and the promotion of teamwork and communities of practice also play essential roles in encouraging more effective and sustainable KMS adoption [1], [10]. Thus, the success of KMS implementation is highly dependent on an organization's ability to manage change, align strategies, and harmoniously integrate technological and human factors.

RQ4: How do employee engagement and organizational culture influence the effectiveness of KMS?

Employee engagement and organizational culture are two key determinants that significantly influence the effectiveness of KMS [13]. An organizational culture that supports openness, collaboration, and continuous learning, and open knowledge-sharing practices has been shown to have a direct positive influence on the success of KMS [1], [6], [14]. In addition, organizational culture also acts as a moderating factor that influences the relationship between strategy, process, technology, and KMS effectiveness [1]. Conversely, an unfavorable organizational culture is often a major obstacle to knowledge transfer and KMS adoption [6].

Employee engagement also has a substantial direct impact on KMS performance. Employee empowerment, active participation in knowledge sharing, and continuous training are important factors in improving system effectiveness [1], [3], [4]. Actively engaged employees are able to accelerate knowledge dissemination, improve the quality of system content, and strengthen cross-unit collaboration. Recent studies further indicate that employee participation in organizational learning activities and collaborative knowledge practices contributes significantly to sustainable KMS adoption and long-term organizational learning [6], [10].

Although the interaction between culture and human factors does not always show a significant moderating effect, both factors independently contribute greatly to the successful implementation of KMS [1]. Overall, a positive organizational culture and high employee engagement are the main foundations of KMS effectiveness [13]. These two factors not only determine the level of system adoption but also influence the sustainability of KMS utilization in supporting organizational learning, performance improvement, innovation capability, and business value creation [8].

RQ5: What are the latest trends in KMS development and utilization in technology-based organizations?

The identification of recent trends in Knowledge Management Systems (KMS) research was based on publication trends, keyword co-occurrence analysis, and thematic evolution identified through bibliometric mapping using VOSviewer. The publication trend analysis shows increasing research interest in KMS after 2021, particularly in studies related to digital transformation, organizational learning, and knowledge-driven competitiveness. In addition, keyword evolution analysis revealed a gradual thematic shift from technology-oriented discussions toward socio-technical, human-centered, and strategy-oriented approaches. These thematic developments indicate that KMS research has evolved from focusing primarily on knowledge repositories and IT infrastructure toward integrated organizational capabilities that support collaboration, innovation, and adaptive decision-making.

The development of Knowledge Management Systems (KMS) in technology-based organizations shows a gradual evolution in line with changes in the technological environment, organizations, and business needs. Recent studies indicate that KMS is no longer viewed solely as a technological tool for

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storing knowledge, but rather as a strategic organizational capability that supports collaboration, innovation, organizational learning, and competitive advantage [6], [14]. In the early stages of KMS research, the main focus was on the role of technology as the main enabler in organizational knowledge management. KMS was understood primarily as a technology-based system that aimed to transform the concept of knowledge management into practical applications, such as knowledge repositories and structured documentation systems [1]. During this period, the main focus of research was on how information technology could support the efficient storage, retrieval, and distribution of knowledge, particularly in knowledge-intensive and high-tech manufacturing organizations [9].

Entering the next phase of development, along with the increasing complexity of the organizational environment and advances in digital technology, KMS research began to highlight the use of advanced technologies, such as cloud computing, to improve knowledge management performance. Studies during this period showed that the integration of digital technology not only improved the efficiency of knowledge management but also supported faster and data-driven decision-making processes [15]. Nevertheless, repository-based KMS remained one of the dominant approaches because organizations continued to require structured mechanisms for managing explicit knowledge at scale, especially in high-tech and manufacturing environments [9].

Subsequent research shifted attention from purely technological aspects toward implementation effectiveness and system adoption challenges. Contemporary studies increasingly argue that KMS failure is often caused not by technological limitations, but by the incompatibility between implementation methodologies and organizational or user needs [6]. As a result, recent literature emphasizes the importance of understanding user requirements, organizational processes, leadership support, and organizational culture in determining successful KMS adoption [1], [6]. In this context, KMS is viewed not merely as a technological system but also as a mechanism that supports organizational memory, virtual collaboration, and communities of practice that facilitate continuous knowledge creation and sharing [6].

At a more advanced stage, recent trends show increasing emphasis on employee engagement and human-centered approaches in KMS utilization. Studies indicate that active employee participation, continuous learning, teamwork, and collaborative knowledge-sharing practices are critical determinants of sustainable KMS implementation [9], [10]. This trend reflects a broader awareness that the effectiveness of KMS depends not only on technological sophistication but also on user commitment, organizational behavior, and cultural readiness.

Recent literature also demonstrates growing interest in the adoption of KMS within Small and Medium Enterprises (SMEs). SMEs increasingly utilize KMS through practical approaches such as employee training, knowledge-sharing sessions, collaborative meetings, and digital repositories as part of strategies to improve organizational performance and competitiveness [10]. In parallel, recent studies place greater emphasis on identifying and prioritizing Critical Success Factors (CSFs), particularly organizational flexibility, communication effectiveness, supportive culture, leadership commitment, and knowledge quality as key determinants of successful KMS implementation [3], [10].

Another emerging trend is the increasing adoption of sector-specific KMS approaches. Recent studies show that industries such as high-technology manufacturing, construction, and knowledge-intensive sectors require adaptive KMS frameworks tailored to their operational characteristics and knowledge-sharing needs [9]. This development reflects a transition from generic KMS implementation models toward more contextual, adaptive, and industry-oriented frameworks capable of supporting cross-project collaboration, distributed knowledge management, and organizational innovation in dynamic business environments.

The findings across the reviewed studies indicate that KMS success factors vary depending on organizational context, industry characteristics, and technological maturity. Studies conducted in SMEs tend to emphasize organizational flexibility, employee participation, and communication effectiveness, whereas studies in high-technology and knowledge-intensive industries place greater emphasis on

technological infrastructure, strategic alignment, and system integration. In addition, several studies highlight that organizational culture and leadership support consistently emerge as dominant factors regardless of organizational type. Compared with previous KMS reviews, this study contributes by integrating bibliometric mapping with qualitative synthesis to provide a more comprehensive understanding of the evolving socio-technical dimensions of KMS implementation in technology-based organizations.

4. Conclusion

This study aims to analyze the success factors of Knowledge Management Systems (KMS) in technology-based organizations through a systematic literature review approach combined with bibliometric analysis. Based on an analysis of 15 Scopus-indexed articles, this study provides a comprehensive overview of the research structure, dominant themes, and developments in KMS studies in the context of knowledge-intensive organizations.

The findings show that the success of KMS implementation is determined by the multidimensional interaction between organizational, technological, and human factors. Top management support, strategic alignment, a supportive organizational culture, and consistent employee involvement emerge as key determinants of KMS success. In addition, reliable technological infrastructure and system quality are important prerequisites, but are not sufficient if not integrated with organizational processes and effective learning practices.

This study also confirms that the application of KMS contributes positively to improving organizational performance and indirectly encourages business innovation through improved organizational learning, knowledge collaboration, and decision-making quality [13]. However, KMS implementation still faces various challenges, particularly those related to cultural resistance, user adoption, and implementation methodology limitations that are not yet fully oriented towards user needs.

Furthermore, the results reveal the latest trends in KMS development and utilization, which are leading to a more integrated socio-technical approach. KMS is increasingly positioned as a strategic catalyst in organizational digital transformation, with increased integration of smart technologies, a focus on user experience, and an emphasis on creating long-term value and competitive advantage.

Theoretically, this research enriches the KMS literature by presenting an integrated synthesis of bibliometric findings and thematic analysis, thereby providing a more holistic understanding of the success factors and dynamics of KMS implementation. From a practical standpoint, the findings of this study provide guidance for practitioners and decision makers in designing and implementing a KMS that is not only technology-oriented but also pays equal attention to organizational and human aspects.

Despite its significant contributions, this study has several limitations. First, the analysis was limited to articles indexed in the Scopus database, which may introduce database bias and exclude relevant studies published in other academic databases such as Web of Science, IEEE Xplore, or Google Scholar. Second, the literature search relied on specific search strings and predefined inclusion criteria, which may have limited the identification of studies using alternative terminology related to Knowledge Management Systems (KMS). Third, although the bibliometric analysis covered the complete dataset, the qualitative synthesis focused only on a limited number of highly cited articles, potentially introducing citation bias and reducing the representation of less-cited but relevant recent studies. In addition, the selection and interpretation of articles in the qualitative review process may involve a degree of subjectivity despite the use of systematic screening procedures. Therefore, future research is recommended to expand the database sources, refine search strategies, include larger and more diverse article samples, and integrate empirical or longitudinal approaches to further explore the role of emerging technologies and sector-specific organizational contexts in the success of KMS implementation.

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