

Artificial Intelligence and Knowledge Management: A Systematic Literature Review

Lili Wang *

School of Economics and Management, Southwest Petroleum University, Chengdu 610500, China

* Corresponding author: (Email: wanglili002024@163.com)

Abstract: Against the global backdrop of widespread informatization and intelligent transformation, artificial intelligence (AI) technology, with its advanced data processing and analytical capabilities, is fundamentally reshaping knowledge management models across industries. As a core approach to enhancing organizational innovation capacity and market competitiveness, the integration of knowledge management with artificial intelligence has emerged as a prominent research hotspot in both academic research and practical application. Exploring the disruptive impact of AI on enterprise knowledge management will also become a critical trend in future research. This paper systematically reviews extant research on AI and knowledge management, and synthesizes relevant literature across multiple core dimensions, including knowledge discovery, knowledge flow, knowledge sharing, and knowledge innovation.

Keywords: Artificial Intelligence; Knowledge Management; Knowledge Discovery; Knowledge Sharing.

1. Introduction

Knowledge management is an innovative managerial approach that enables efficient knowledge retrieval and reuse via the identification and integration of specialized expertise [1]. With the rapid advancement and iteration of digital technologies, AI has been increasingly embedded in organizational management contexts, and its integration with knowledge management has become a critical pathway for enterprise digital transformation. AI technology can streamline operational workflows across all conventional phases of knowledge management, significantly improve the quality and efficiency of knowledge management, and provide core technical support for enterprise knowledge and information governance [2]. Meanwhile, the deep integration of these two domains has given rise to novel knowledge production and dissemination paradigms, exemplified by knowledge graphs and generative artificial intelligence, thereby fundamentally restructuring the practical framework of organizational knowledge management [3, 4]. Accordingly, AI-enabled knowledge management represents not only a core exploration priority in industrial practice, but also a burgeoning research frontier at the intersection of management science and information science. Notably, a growing body of scholarship has examined technology application outcomes and scenario-specific implementation pathways, driving sustained expansion of research on AI and knowledge management. This paper systematically synthesizes extant research on AI and knowledge management, and analyzes the multifaceted impacts of AI on core knowledge management processes, namely knowledge discovery, knowledge flow, knowledge sharing, and knowledge creation. Building on this analysis, it further explores the potential risks of AI application in knowledge management from the perspectives of privacy protection and ethical governance.

2. Current Research on AI's Impacts on Knowledge Management

Knowledge management encompasses a set of interconnected processes including knowledge creation, storage, conversion, and application. As a dynamic and enduring organizational phenomenon, it constitutes a pivotal source of firms' core competitive advantages [1]. Kovačić et al. (2022) demonstrate that AI exerts a significant influence on organizational knowledge creation: it identifies novel knowledge patterns via data mining and analysis, and facilitates more efficient knowledge storage, retrieval, and sharing, thereby enhancing the overall efficiency and accuracy of organizational knowledge management [5]. Mittal et al. (2023) conducted an empirical analysis using stepwise multiple regression with a sample of industry experts. Their findings validate the positive value of AI technology in knowledge management contexts, offering empirical support for firms seeking to implement AI-driven knowledge management systems [6]. Hossein et al. (2023) developed a partnership model for AI and knowledge management that delineates AI's potential roles in supporting knowledge creation, storage and retrieval, sharing, and application, providing novel analytical lenses and approaches for organizational management innovation [7]. Taherdoost and Madanchian (2023) contend that AI has become a cornerstone of knowledge management, as it advances information acquisition, development, and sharing, as well as their effective deployment within organizations. For instance, machine learning and related technologies can optimize knowledge management systems, enabling firms to improve decision-making efficiency and strengthen competitive performance [1]. Liu et al. (2024) find that AI orientation affects the pace of organizational internationalization, while robust knowledge management facilitates AI deployment in internationalization processes and accelerates firms' global expansion [8]. Lea et al. (2024) investigated AI implementation in business communication and highlighted the enabling role of knowledge management in this process

[9].

2.1. Impact of Artificial Intelligence on Knowledge Discovery

Knowledge discovery refers to the process of extracting valid, novel, potentially useful, and ultimately interpretable patterns and knowledge from structured and unstructured datasets. Piad-Morffis et al. (2020) developed a computational ecosystem to support knowledge discovery technologies for Spanish-language e-health. Equipped with dedicated computational infrastructure and baseline solutions, the ecosystem enables researchers to rapidly prototype knowledge discovery tools and obtain iterative feedback, providing a reusable framework for AI-enabled knowledge discovery implementation in vertical domains [10]. Guodong et al. (2020) proposed a knowledge graph-based service discovery approach, and designed the full workflow including knowledge graph construction, query template generation, and experimental validation. The study confirms that knowledge graphs visualize the associative logic among knowledge entities, enable users to gain in-depth insights into knowledge systems, and uncover underlying connections and problem-related insights, thus effectively improving the accuracy and efficiency of service discovery [11]. Linsel et al. (2020) developed GeoReVi, a software system for knowledge discovery and data management in subsurface characterization that integrates system architecture design, data storage, statistical analysis, and visualization modules. Empirical results demonstrate that GeoReVi effectively processes and analyzes subsurface data and supports multi-user collaborative work, further corroborating that AI enables researchers to extract valuable insights from large-scale datasets [12]. Abe et al. (2021) argue that AI expands knowledge discovery pathways by uncovering novel associations and patterns within large-scale datasets that remain imperceptible to human analysts. In the medical domain, for instance, AI-driven analysis of extensive medical records and clinical data can identify novel associations between diseases, symptoms, and treatment regimens, supporting clinical diagnosis and treatment planning [13]. Schatz et al. (2021) proposed E3D2, an interpretable automated fact-checking solution grounded in knowledge graph patterns, to validate hypotheses in drug discovery. The E3D2 method accurately extracts and evaluates explanatory pathways from large-scale biomedical knowledge graphs, with its performance metrics outperforming existing benchmarks in accuracy and reliability. The knowledge graph pattern-based explanations generated by E3D2 are interpretable and logically consistent, providing actionable insights for drug discovery research [14]. Oliveira Jr and Oliveira (2022) note the growing application of machine learning, which effectively addresses classification tasks to enable machine-generated knowledge. Advances in machine learning algorithms, including deep learning and reinforcement learning, have empowered AI to accelerate knowledge production, access, and utilization. AI extracts implicit, previously unknown, and practically useful information from voluminous datasets, drastically shortening the knowledge production cycle. In scientific research, for example, AI enables rapid analysis of experimental data and derivation of research conclusions [15]. Shu and Ye (2023) posit that knowledge discovery is a dialectical research process integrating deduction and induction. Data mining and machine learning serve critical functions in scientific research

by identifying informational correlations and uncovering potential causal relationships. Data mining facilitates the development of novel conceptual frameworks and advances theoretical innovation, while corresponding models deliver comprehensive explanations of phenomena to enhance predictive accuracy [16].

2.2. Impact of Artificial Intelligence on Knowledge Flow

Knowledge flow refers to the dissemination, transfer, and exchange of knowledge across individuals, teams, organizations, and disciplinary domains. It facilitates knowledge sharing and innovation by extending the scope of knowledge application and development. AI enhances the efficiency and precision of knowledge retrieval via technologies such as intelligent recommendation systems and natural language processing (NLP), and delivers targeted knowledge to relevant stakeholders, thereby accelerating intra-organizational knowledge flow. From the perspective of AI-collaborative knowledge innovation management, Liu (2022) confirms that AI technology exerts significant positive effects on the dynamic, capability, and environmental dimensions of knowledge flow, as well as knowledge stock management. Specifically, AI endogenously enhances knowledge flow capacity and network diffusion efficiency, automatically identifies newly generated knowledge, and activates the internal drivers of knowledge transmission, supporting the cultivation of original technological innovation advantages [17].

2.3. Impact of Artificial Intelligence on Knowledge Sharing

Knowledge sharing is the process through which individuals, teams, and organizations exchange and disseminate knowledge reciprocally. Via knowledge sharing, actors transfer their expertise to others while acquiring new knowledge from external sources, collectively achieving knowledge augmentation and expansion. Malik et al. (2021) show that AI facilitates knowledge sharing in multinational IT enterprises, thereby enhancing organizational attractiveness and competitive standing [18]. Olan et al. (2022) argue that AI improves organizational performance by boosting the efficiency and accuracy of knowledge processing, while well-designed knowledge sharing mechanisms foster intra-organizational collaboration and innovation, further amplifying performance outcomes [19]. Li et al. (2022) developed an integrated model linking AI capability, knowledge sharing, and organizational creativity. Using regression analysis and complementary methods, the study confirms that AI capability exerts a positive effect on knowledge sharing, and that the combination of AI capability and knowledge sharing significantly enhances organizational creativity [20]. Mohammed et al. (2022) note that knowledge sharing in AI services can be enabled via market mechanisms, offering novel insights for AI service development [21]. Employing multi-level correlation and regression analysis, Binsaeed et al. (2023) demonstrate that AI promotes knowledge sharing, which mediates the relationship between digital technology and AI adoption [22].

2.4. Impact of Artificial Intelligence on Knowledge Creation

Knowledge creation refers to the process of generating novel knowledge, theories, methodologies, and technologies.

Rooted in innovative thinking, research and development, and practical experience, it constitutes the foundational source of knowledge development and advancement. AI also demonstrates substantial potential in facilitating knowledge creation. Through case study analysis, Nestian et al. (2020) propose that embedding AI into organizational knowledge creation processes expands the pathways and methodologies of knowledge generation. AI supports organizational knowledge creation by analyzing large-scale datasets and uncovering latent knowledge associations, thereby improving the efficiency and quality of knowledge creation outcomes [23]. Grounded in adaptive structuration theory, Zhang et al. (2023) argue that AI-generated content (AIGC) exerts a profound impact on organizational knowledge creation by reshaping organizational knowledge structures and creation workflows [24]. Alavi et al. (2024) contend that during the internalization phase of knowledge creation, individuals develop new knowledge via cognitive processes including learning and reflection. Generative AI (GenAI) facilitates and enriches these processes through interactive, dialogic engagement between users and its analytical and predictive capabilities [25].

2.5. Impact of Artificial Intelligence on Knowledge Innovation

Knowledge innovation refers to the development of novel knowledge, theories, methodologies, technologies, and products through scientific research, learning, and practical activities. It encompasses both the refinement and expansion of existing knowledge and the exploration of entirely new knowledge domains and conceptual frameworks. As a core driver of sustainable organizational development, knowledge innovation is strongly enabled by AI technologies. Bai et al. (2020) argue that the integration of collaborative knowledge innovation management and technological innovation has become a comprehensive strategy for organizations to navigate complex and dynamic external environments. The advancement of AI has injected new momentum into the transformation of collaborative knowledge innovation management, with its driving role primarily manifested in process automation and intelligent governance—spanning the entire workflow from data collection and feedback to monitoring, evaluation, analysis, forecasting, and decision-making [26].

2.6. Impact of Artificial Intelligence on Knowledge Integration

Knowledge integration is the process of organizing dispersed, fragmented knowledge segments into a structured, systematic knowledge architecture. By eliminating silos and inconsistencies across knowledge assets, knowledge integration establishes a unified knowledge framework that delivers more comprehensive and accurate support for organizational decision-making and action. AI enables automated knowledge classification, association, and integration via technologies such as the semantic web and ontologies. Pai et al. (2022) conclude that the integration of AI and knowledge management systems relies on effective human-technology synergy. Throughout the integration process, human actors contribute domain expertise and contextual judgment, while AI processes large-scale datasets and generates intelligent analytical outputs. Their collaboration ultimately enhances the overall performance of knowledge management systems [27].

2.7. Impact of Artificial Intelligence on Knowledge Transfer

Knowledge transfer refers to the process of transmitting knowledge across individuals, teams, and organizational boundaries. It aims to facilitate knowledge sharing and dissemination across different actors, thereby advancing knowledge application and innovation. AI has drastically accelerated knowledge transfer by enhancing dissemination speed. For instance, intelligent recommendation systems deliver targeted knowledge content aligned with user interests and needs, reducing the time required for knowledge to reach relevant users. Natural language processing further enables cross-language knowledge dissemination, breaking down linguistic barriers and facilitating global knowledge transfer. Using the case of AI-enabled resource management in RAN slicing, Zhou et al. (2022) demonstrate that AI promotes knowledge transfer and reuse, improving resource management efficiency [28].

2.8. Impact of Artificial Intelligence on Knowledge Mining

Knowledge mining refers to the process of identifying meaningful patterns, rules, relationships, and other knowledge elements from large, complex data repositories using statistical methods, machine learning, database technologies, and other technical approaches. Deep learning algorithms are particularly effective at uncovering hidden complex nonlinear relationships within datasets. In medical imaging diagnosis, for example, deep learning models extract disease features from imaging data to support clinicians in making more accurate diagnostic decisions. Alves et al. (2022) synthesized existing chemogenomics data on rare diseases and demonstrated that machine learning can accelerate rare disease drug discovery via biomedical knowledge graph mining [29].

3. Adverse Impacts of AI Application in Knowledge Management

3.1. Privacy Protection Issues

Sahay et al. (2021) posit that secure knowledge management is a subfield of security science focused on the secure collection, organization, and dissemination of knowledge. Malicious actors—including state-sponsored hackers, corporate competitors, and independent threat actors—consistently exploit vulnerabilities in knowledge management systems to launch passive and active attacks. These attacks range from information theft to ransomware-enabled extortion, necessitating robust security systems to prevent persistent malicious activities on host systems storing critical organizational information [30]. AI deployment in knowledge management requires processing large volumes of personal and sensitive data, yet AI systems carry inherent uncertainties and risks, including algorithmic bias and data breaches. These risks can undermine the effectiveness and security of knowledge management practices.

3.2. Ethical Issues

AI application in knowledge management also raises a suite of ethical concerns, most notably intellectual property ownership and data usage rights. These issues require systematic resolution to ensure the legal and compliant deployment of AI technologies. Aanchal et al. (2022) argue

that ethical norms play a critical role in knowledge management, and that the ethical vulnerabilities of AI impose adverse effects on knowledge management practices [31]. Amid the rapid advancement of AI technology, existing laws and regulations often fail to fully address emerging scenarios and challenges. Accordingly, continuous improvement of the legal and regulatory framework is essential to provide robust institutional support for AI application in the knowledge management domain.

4. Conclusion

With its advanced data processing, semantic analysis, and intelligent generation capabilities, AI has comprehensively reshaped the operational paradigm of organizational knowledge management. It not only drastically improves operational efficiency across all knowledge management processes, but also gives rise to novel knowledge production models such as human-AI co-creation, providing robust technical support for organizations to enhance innovation capacity and competitive advantage. Nonetheless, AI application in knowledge management also introduces unprecedented challenges, including privacy breaches and ethical risks. Only by establishing a sound governance framework and striking a balance between efficiency enhancement and risk mitigation can the full value of AI-enabled knowledge management be realized.

References

- [1] Taherdoost, H., & Madanchian, M. (2023). Artificial intelligence and knowledge management: Impacts, benefits, and implementation. *Computers*, 12(4), 72. <https://doi.org/10.3390/computers12040072>
- [2] Lee, C.-P., Lee, G.-G., & Lin, H.-F. (2007). The role of organizational capabilities in successful e-business implementation. *Business Process Management Journal*, 13(5), 677–693. <https://doi.org/10.1108/14637150710782370>
- [3] Storey, V. C. (2025). Knowledge management in a world of generative AI: Impact and implications. *ACM Transactions on Management Information Systems*, 16(3), 1–14. <https://doi.org/10.1145/3721126>
- [4] Panda, M., & Puri, R. (2025). Understanding the role of artificial intelligence in knowledge management systems: A systematic review using the antecedent, consequences and intervention framework. *Journal of Work-Applied Management*, 18(1), 81–103. <https://doi.org/10.1108/JWAM-08-2024-0125>
- [5] Kovačić, M., Mutavdžija, M., Buntak, K., et al. (2022). Using artificial intelligence for creating and managing organizational knowledge. *Tehnički vjesnik*, 29(4), 1413–1418. <https://doi.org/10.17559/TV-20211220103459>
- [6] Mittal, A., Singh, S., & Rajest, S. S. (2023). Role of artificial intelligence in knowledge management: An empirical study of industry experts using stepwise multiple regression. *International Journal of Electronic Finance*, 12(4), 403–422. <https://doi.org/10.1504/IJEF.2023.133695>
- [7] Hossein, M. J., David, A., Ali, E., et al. (2023). Artificial intelligence and knowledge management: A partnership between human and AI. *Business Horizons*, 66(1), 87–99. <https://doi.org/10.1016/j.bushor.2022.09.003>
- [8] Liu, Y., Ying, Z., Ying, Y., et al. (2024). Artificial intelligence orientation and internationalization speed: A knowledge management perspective. *Technological Forecasting and Social Change*, 205, 123517. <https://doi.org/10.1016/j.techfore.2024.123517>
- [9] Lea, I., Chiara, N., Francesca, V., et al. (2024). Supporting the implementation of AI in business communication: The role of knowledge management. *Journal of Knowledge Management*, 28(1), 85–95. <https://doi.org/10.1108/JKM-01-2023-0064>
- [10] Piad-Morffis, A., Gutiérrez, Y., Almeida-Cruz, Y., et al. (2020). A computational ecosystem to support health knowledge discovery technologies in Spanish. *Journal of Biomedical Informatics*, 109, 103517. <https://doi.org/10.1016/j.jbi.2020.103517>
- [11] Guodong, L., Zhang, Q., Ding, Y., et al. (2020). Research on service discovery methods based on knowledge graph. *IEEE Access*, 8, 138934–138943. <https://doi.org/10.1109/ACCESS.2020.3012642>
- [12] Linsel, A., Bär, K., Haas, J., et al. (2020). GeoReVi: A knowledge discovery and data management tool for subsurface characterization. *SoftwareX*, 12, 100597. <https://doi.org/10.1016/j.softx.2020.100597>
- [13] Abe, N., Liu, H., & Wang, K. (2021). Innovations and perspectives in data mining and knowledge discovery. *Frontiers in Big Data*, 3, 637906. <https://doi.org/10.3389/fbigd.2020.637906>
- [14] Schatz, K., Melo-Filho, C., Tropsha, A., et al. (2021). Explaining drug-discovery hypotheses using knowledge-graph patterns. In 2021 IEEE International Conference on Big Data (Big Data) (pp. 3709–3714). IEEE. <https://doi.org/10.1109/BigData52589.2021.9619447>
- [15] Oliveira Jr, O. N., & Oliveira, M. C. F. (2022). Materials discovery with machine learning and knowledge discovery. *Frontiers in Chemistry*, 10, 930369. <https://doi.org/10.3389/fchem.2022.930369>
- [16] Shu, X., & Ye, Y. (2023). Knowledge discovery: Methods from data mining and machine learning. *Social Science Research*, 110, 102817. <https://doi.org/10.1016/j.ssresearch.2023.102817>
- [17] Liu, Q. (2022). Analysis of collaborative driving effect of artificial intelligence on knowledge innovation management. *Scientific Programming*, 2022, 8223724. <https://doi.org/10.1155/2022/8223724>
- [18] Malik, A., De Silva, M. T. T., Budhwar, P., et al. (2021). Elevating talents' experience through innovative artificial intelligence-mediated knowledge sharing: Evidence from an IT-multinational enterprise. *Journal of International Management*, 27(4), 100871. <https://doi.org/10.1016/j.intman.2021.100871>
- [19] Olan, F., Arakpogun, E. O., Suklan, J., et al. (2022). Artificial intelligence and knowledge sharing: Contributing factors to organizational performance. *Journal of Business Research*, 145, 605–615. <https://doi.org/10.1016/j.jbusres.2022.03.046>
- [20] Li, N., Yan, Y., Yang, Y., et al. (2022). Artificial intelligence capability and organizational creativity: The role of knowledge sharing and organizational cohesion. *Frontiers in Psychology*, 13, 845277. <https://doi.org/10.3389/fpsyg.2022.845277>
- [21] Mohammed, T., Naas, S. A., Sigg, S., et al. (2022). Knowledge sharing in AI services: A market-based approach. *IEEE Internet of Things Journal*, 10(2), 1320–1331. <https://doi.org/10.1109/JIOT.2022.3214476>
- [22] Binsaeed, R. H., Yousaf, Z., Grigorescu, A., et al. (2023). Knowledge sharing key issue for digital technology and artificial intelligence adoption. *Systems*, 11(7), 316. <https://doi.org/10.3390/systems11070316>
- [23] Neșțian, A. Ș., Tiță, S. M., & Guță, A. L. (2020). Incorporating artificial intelligence in knowledge creation processes in organizations. In *Proceedings of the International Conference on Business Excellence* (Vol. 14, No. 1, pp. 597–606). <https://doi.org/10.2478/picbe-2020-0056>

- [24] Zhang, X., Liu, Z., Cheng, Y., et al. (2023). The impact of AIGC on organizational knowledge creation: From the perspective of adaptive structuration theory. In 2023 IEEE International Conference on Data Mining Workshops (ICDMW) (pp. 1469–1476). IEEE. <https://doi.org/10.1109/ICDMW60846.2023.00194>
- [25] Alavi, M., Leidner, D., & Mousavi, R. (2024). Knowledge management perspective of generative artificial intelligence (GenAI). (pp. 1–12).
- [26] Bai, X. J., & Li, J. J. (2020). The best configuration of collaborative knowledge innovation management from the perspective of artificial intelligence. *Knowledge Management Research & Practice*. <https://doi.org/10.1080/14778238.2020.1814642>
- [27] Pai, R. Y., Shetty, A., Shetty, A. D., et al. (2022). Integrating artificial intelligence for knowledge management systems—synergy among people and technology: A systematic review of the evidence. *Economic Research-Ekonomska Istraživanja*, 35(1), 7043–7065. <https://doi.org/10.1080/1331677X.2022.2068237>
- [28] Zhou, H., Erol-Kantarci, M., & Poor, H. V. (2022). Knowledge transfer and reuse: A case study of AI-enabled resource management in RAN slicing. *IEEE Wireless Communications*, 30(5), 160–169. <https://doi.org/10.1109/MWC.001.2200087>
- [29] Alves, V. M., Korn, D., Pervitsky, V., et al. (2022). Knowledge-based approaches to drug discovery for rare diseases. *Drug Discovery Today*, 27(2), 490–502. <https://doi.org/10.1016/j.drudis.2021.10.021>
- [30] Sahay, K. S., Goel, S., et al. (2021). Advances in secure knowledge management in the artificial intelligence era. *Information Systems Frontiers*, 23(4), 1–4. <https://doi.org/10.1007/s12526-021-09578-1>
- [31] Aanchal, S., Tushar, T., Divyansh, P., et al. (2022). Knowledge management and ethical vulnerability in AI. *AI and Ethics*. <https://doi.org/10.1007/s43681-022-00177-4>