Generative AI Solutions for Enhancing Knowledge Management: A Literature Review and Roadmap

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Abstract: This article explores the potential of Generative Artificial Intelligence (GenAI) to improve knowledge management in organizations. Despite growing interest in GenAI, a thorough review of its applications and effectiveness in knowledge management is still needed. GenAI has shown promise in automating content creation, synthesizing information, and improving decision-making processes. However, its integration into knowledge management systems remains fragmented. This study seeks to consolidate existing knowledge and chart a path for future research in this area. The research uses a systematic literature review (SLR) following PRISMA guidelines, complemented by a thematic analysis to ensure a comprehensive assessment of the existing literature. We reviewed articles published between 2020 and 2024, focusing on GenAI applications in knowledge management. A thematic analysis was conducted to identify key themes and trends. This paper contributes to the academic and professional environment by providing a detailed review of GenAI applications in knowledge management, identifying best practices, and offering strategic recommendations for leveraging GenAI to improve organizational processes. The review highlights key areas where GenAI can improve knowledge management: automating the generation of knowledge assets, enhancing knowledge discovery and retrieval, supporting collaboration, and improving decision making through advanced analytics. In addition, it addresses ethical considerations and potential challenges, such as data privacy and the need for human oversight.

Keywords: Generative AI, Knowledge Management, Decision-Making, Organizational Innovation.

1. Introduction

Since the 1990s, firms adopted a knowledge-based view, transforming into systems for producing and applying knowledge, with outcomes as products and services (Zhou et al., 2024; Wang et al., 2023; Ji et al., 2024). Knowledge solidified as a cornerstone of organizational strategy, essential for competition and innovation (Sumbal and Amber, 2024; Hu et al., 2024; Bilgram and Laarmann, 2023). Despite diluted terminology, the concept of organizations as creators and applicators of knowledge endures (Pan et al., 2024; Zheng et al., 2024).

On this basis, generative artificial intelligence (GenAI) has revolutionized organizational knowledge management, offering unprecedented opportunities. The emerging GenAI tools are versatile and can be employed in diverse fields (Eloundou et al., 2023). This research addresses: What is the current state of research on GenAI in Knowledge Management, and what challenges does it currently face?

2. Methodology

Systematic reviews need to be updated periodically to stay relevant and incorporate the latest evidence. This review examines literature from 2020 to 2024, concentrating on gaps in Knowledge Management using GenAI, starting with the identification of pertinent keywords. A search for peer-reviewed English articles was conducted in the Scopus database. Keywords used included: (Generative Artificial Intelligence, Generative AI; Knowledge Management, Organizational Knowledge; Innovation). Articles related to business and management were selected. Following this, study selection, data extraction, synthesis, and interpretation of results were performed (Machado et al., 2019). 42 studies were included. The complete methodological process is shown in Figure 1.

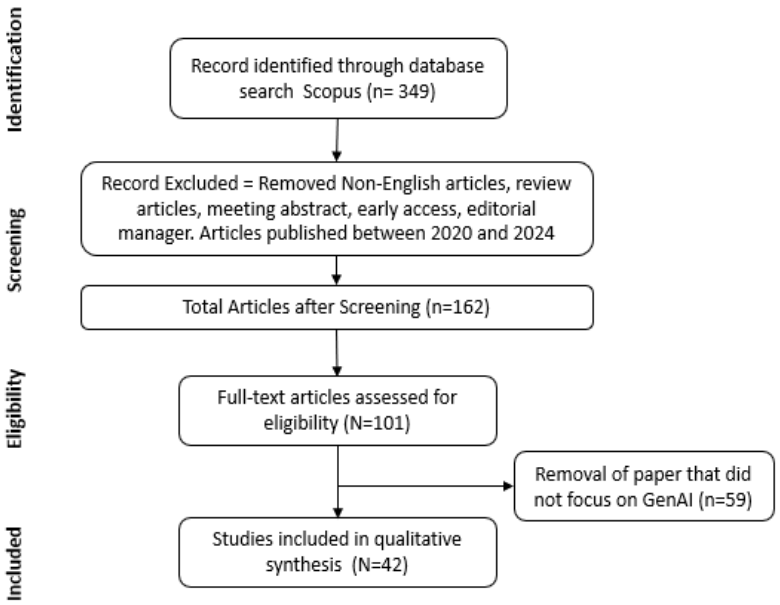

Figure 1: Flow Diagram Prisma

3. Findings

In organizations, knowledge is distributed among individuals' minds, social systems, procedures and computer files. Tacit knowledge resides in individuals and organizational culture, whereas explicit knowledge is documented in forms such as policies, procedures and information systems (Nazeer et al., 2023). Historically, the ability to store organizational knowledge was limited by the type and availability of data (Lee et al., 2024). GenAI is able to process huge amounts of data from reports, query responses and meeting notes (Kernan Freire et al., 2024) and manage it in different ways to create new and better content (Alavi et al. 2024), storing this information for future reference (Chen and Zhu, 2023; Vandelanotte et al., 2023) even GenAI excels at processing data, regardless of whether it is unstructured or well-structured (Xia et al., 2024). This advance facilitates knowledge access and management, but also presents new challenges, redefining the landscape of knowledge management in organizations (Yang et al., 2024; Ali et al., 2023).

The application of knowledge is a crucial aspect of knowledge management within organizations as it generates value (Jablonka et al., 2024). Simply storing and making knowledge accessible does not automatically improve productivity and performance (Benbya et al., 2024). Recent case studies and research indicate that GenAI systems are positively influencing knowledge work by boosting productivity and knowledge application. For example, GenAI can be used for the creation of interactive training material, thereby increasing the effectiveness of the process because the new employee can learn on his own and does not need another employee at his side, which consumes time and resources (Alavi et al. 2024). Furthermore Brynjolfsson et al. (2023) found that leveraging GenAI to capture, combine and apply customer service knowledge resulted in an overall productivity increase of 14% for customer service agents, with a 30% increase for novice agents. In addition, the quality of customer service improved, as seen in higher customer satisfaction scores. In addition, the quality of customer service improved, as seen in higher customer satisfaction scores. Initial use cases suggest that GenAI tools have the potential to improve knowledge application and performance. For example, Intercom, a company specializing in customer service solutions, has launched pilot programs using GenAI to improve customer engagement and drive corporate growth (Reid, 2023). Similarly, JP Morgan (2023) is employing GenAI to create synthetic data that trains machine learning models to detect new and emerging anomalies, which could be missed if trained on real data alone. The integration of GenAI into organizational knowledge management processes is expected to boost productivity and the quality of knowledge work in several industries.

Goldman Sachs (2023) predicts that widespread adoption of GenAI could increase annual labor productivity growth in the United States by almost 1.5 percentage points. Knowledge management of the future will depend more on the ability to efficiently search databases and obtain the desired results, rather than on the direct acquisition of knowledge (Jarrahi et al., 2023). This approach is driven by the ability of GenAI tools to interpret

natural language, thus enabling user needs to be met more accurately. Therefore, users will not need to internalize as much knowledge.

Successful adoption of GenAI in knowledge management requires staff buy-in, which can be difficult because some workers fear being replaced by software. The effectiveness of GenAI tools relies on their ability to be trained and to handle tacit and implicit knowledge, which makes employee buy-in crucial. If employees resist the use of new technologies, implementation will not be effective (Alavi, Leidner and Mousavi, 2024).

4. Expected Results and Future Plan

Integrating Generative AI (GenAI) into knowledge management systems is set to revolutionize how organizations manage and utilize their intellectual assets. By automating content creation, enhancing data analysis, and streamlining decision-making processes, GenAI enables organizations to transcend traditional knowledge management boundaries, leading to substantial improvements in operational efficiency, innovation, and competitive advantage. GenAI helps uncover hidden patterns and insights from large datasets, fostering more effective knowledge sharing and collaboration across teams. By automating repetitive tasks such as report generation and data entry, GenAI allows employees to focus on higher-value activities, thereby boosting productivity.

Organizations adopting GenAI can anticipate accelerated innovation cycles, enabling them to develop new products and services more quickly and efficiently. The flexibility of GenAI solutions ensures that organizations can scale their knowledge management practices and adapt swiftly to changing market conditions. To maximize these benefits, organizations should implement comprehensive training programs to equip employees with the necessary skills to utilize GenAI tools effectively and cultivate a culture of innovation.

Through this research, we aim to identify key trends in the impact of generative artificial intelligence on knowledge management. Our objective is to provide organizational leaders with critical insights that will help them address the ethical challenges associated with GenAI use, thereby facilitating the development of appropriate policies and guidelines.

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