Knowledge Management in the Fourth Industrial Revolution: Mapping the Literature and Scoping Future Avenues

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Abstract—Due to increased competitive pressure, modern organizations tend to rely on knowledge and its exploitation to sustain a long-term advantage. This calls for a precise understanding of knowledge management (KM) processes and, specifically, how knowledge is created, shared/transferred, acquired, stored/retrieved, and applied throughout an organizational system. However, since the beginning of the new millennium, such KM processes have been deeply affected and molded by the advent of the fourth industrial revolution, also called Industry 4.0, which involves the interconnectedness of machines and their ability to learn and share data autonomously. For this reason, the present study investigates the intellectual structure and trends of KM in Industry 4.0. Bibliometric analysis and a systematic literature review are conducted on a total of 90 relevant articles. The results reveal 6 clusters of keywords, subsequently explored via a systematic literature review to identify potential stream of this emergent field and future research avenues capable of producing meaningful advances in managerial knowledge of Industry 4.0 and its consequences.

***Index Terms*— Industry 4.0, Knowledge Management, Fourth Industrial Revolution, IoT, Internet of Things, Big Data, Smart Factory, Knowledge Sharing, Manufacturing Innovations, Cyber Physical System, Condition Monitoring, Cyber-Physical Production Systems, Digital Economy, Digital Transformation, Literature Review, Bibliometrics, Future Research, Forecasting, Technology Foresight**

MANAGERIAL RELEVANCE STATEMENT

This study suggests the evolving field of knowledge management significantly influences organizational performance in the era of Industry 4.0. Findings reported in the literature clearly demonstrate that companies must consider the topic of knowledge management concomitantly with the implementation of Industry 4.0 innovations. Novel interactions between machinery and humans are imminent and will reconfigure organizational approaches to production, product development, and monitoring. Managers need to create an environment where the effectiveness of these upcoming transformations is clearly understood. In Industry 4.0, where change occurs rapidly, managers should consider their organization's capability of handling and managing high flows of knowledge resulting from the implementation of Industry 4.0.

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