Chapter 1
Bibliometric Analysis for Artificial Intelligence in Logistics: A Comprehensive Review

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ABSTRACT

This study conducts a comprehensive bibliometric analysis of AI in logistics using various methodologies and techniques. It identifies prominent documents, sources, authors, and countries, and explores sentiments, collaboration networks, and abstract clustering. The findings provide valuable insights for researchers and decision-makers, guiding future research and investment decisions. However, limitations exist, and the field is constantly evolving. This analysis contributes to the scholarly community and offers a foundation for future research in AI logistics.

INTRODUCTION

Artificial intelligence (AI) has emerged as a transformative technology in various industries including logistics. In the logistics industry, AI is increasingly utilized to optimize operations, improve efficiency, and enhance decision-making processes. AI systems can analyze vast amounts of data from multiple sources, such as sensors, GPS, and RFID, to provide real-time insights and enable predictive analytics for supply chain management(Garg et al (2021))

Artificial intelligence (AI) has the potential to revolutionize various aspects of logistics. It offers transformative potential for the augmentation and replacement of human tasks and activities within the logistics industry (Dwivedi et al., 2021). AI can be applied in various areas of logistics, such as supply chain management, warehousing, transportation, and last-mile delivery Gružauskas & Pačėsaitė, 2021; Shi, 2022; Rosendorff et al., 2021). It can optimize operations, improve efficiency, and enhance

DOI: 10.4018/979-8-3693-0225-5.ch001

decision-making processes (Calatayud et al., 2019; Gružauskas & Pačėsaitė, 2021). AI-based methods can be used to automate warehouse operations, optimize vehicle routes, and predict customer behavior Gružauskas & Pačėsaitė, 2021; Shi, 2022). AI can also be used for inventory management, demand forecasting, and risk prediction (Sharma et al., 2021; Modgil et al., 2021). The integration of AI with logistics systems can increase work efficiency and reduce costs (Zhu et al. 2022). However, the adoption of AI in logistics raises concerns about job loss and the need for upskilling and training (Esper, 2022). Overall, AI has the potential to transform and improve the logistics industry significantly by enhancing productivity, efficiency, and customer satisfaction (Woschank et al. 2020).

Artificial intelligence (AI) has a wide range of applications in logistics. It can be used to optimize and automate various processes, leading to increased efficiency and improved decision making. AI can be applied to supply chain management to enhance demand forecasting, inventory management, and risk prediction. (2021) Wilson et al., 2021). They can also be used in intelligent transport logistics to improve the performance of transport systems and processes (Woschank et al., 2020). In last-mile delivery, AI can be used to forecast delivery times and improve delivery forecasting (Rosendorff et al., 2021). AI can also play a crucial role in warehouse operations by automating tasks and improving logistics operations (Pandian, 2019). AI technologies such as machine learning, data mining, and predictive analytics can be employed to analyze large volumes of data and extract valuable insights for logistics optimization (Xian, 2022; "Expert System for Freight Coordination Based on Artificial Intelligence", 2021). Furthermore, AI can contribute to the development of smart logistics environments, enabling efficient and economic solutions for logistics companies (Issaoui et al. 2022). However, the adoption of AI in logistics also presents challenges such as the need for skilled personnel and addressing barriers related to implementation (Shrivastav, 2022; Esper, 2022). Overall, AI has the potential to revolutionize the logistics industry by enhancing productivity, efficiency, and sustainability (Sharma et al., 2021; Liu et al., 2020).

Literature Review

Artificial Intelligence (AI) has rapidly emerged as a vital enabler in the logistics and supply chain management landscape (Woschank et al., 2020). The integration of AI technologies such as machine learning, deep learning, and predictive analytics significantly enhances various aspects of the logistics industry, including supply chain management, warehousing, transportation, and last-mile delivery (Wilson et al., 2020; Wilson et al., 2021). This integration optimizes operations, improves decision-making processes, automates tasks, and develops intelligent logistics systems ("Expert System for Freight Coordination Based on Artificial Intelligence", 2021). In particular, warehouse automation has gained attention, facilitating task automation and contributing to the broader goal of warehouse automation (Correll et al., 2018; Rana, 2023).

Furthermore, predictive analytics and demand forecasting play crucial roles in the supply chain management and decision-making processes. Big data analytics (BDA) and advanced predictive analytics techniques, including deep neural networks, enhance the accuracy of demand forecasting (Arunachalam et al., 2018; Vecchio et al., 2020). These advances have improved areas such as inventory optimization, labor scheduling, route optimization, and price optimization (Arunachalam et al., 2018).

However, the adoption of AI in logistics presents challenges, including the need for skilled personnel and addressing barriers to implementation (Yigitcanlar&Cugurullo, 2020). Additionally, supply chain risk management and resilience have become critical because of today's dynamic and uncertain business environments. Proactive risk management strategies and the integration of AI with technologies such