Issues in Information Systems
Volume 26, Issue 2, pp. 258-266, 2025

DOI: https://doi.org/10.48009/2_iis_120

The AI-driven sustainability: transforming supply chains for a greener future

Hesham Allam, *Ball State University, hesham.allam@bsu.edu*
Edward J. Lazaros, *Ball State University, ejlazaros@bsu.edu*
Christopher B. Davison, *Ball State University, cbdavidson@bsu.edu*
Allen D. Truell, *Ball State University*, *atruell@bsu.edu*

Abstract

AI in logistics – sustainable supply chain management has the potential to improve sustainable supply chain management, as it can be utilized to optimize resource utilization and reduce waste, thereby improving environmental footprints at both company and supply chain levels. As companies face mounting pressure to be environmentally friendly, AI-powered solutions can help provide more accurate demand forecasting, optimize logistics operations, and minimize carbon emissions simultaneously. This study examines the role of AI technologies in sustainable supply chains, with a focus on intelligent resource allocation, predictive analytics, and circular economy solutions. By combining AI with other key technologies, businesses can enhance resilience, drive cost savings, and meet the growing consumer expectation for environmental responsibility.

Keywords: artificial intelligence, sustainable supply chains, resource optimization, smart logistics, Green procurement

Introduction

In the last couple of years, the application of Artificial Intelligence (AI) has revolutionised the Supply Chain Management (SCM). AI, combined with machine learning and predictive analytics, can accurately forecast demand, which is crucial in the fight against overproduction, overstocking, and stockouts (Nweje & Taiwo, 2025). Algorithmic AI models, such as linear regression and Random Forest, have proven effective in various tasks, including sales volume forecasting and synchronizing stock with market needs, ultimately assisting companies in minimizing both material and financial costs (Hasan, Islam & Rahman, 2025). An illustrative example is that of the German online retailer Otto, which used an AI-driven demand forecasting solution to cut stock levels by 90% (Burgess, 2018).

The combination of sensor-based bins, waste-sorting robots, and predictive modeling technologies under the umbrella of smart technologies improves recycling and waste sorting operations through automated systems and data analytics (Chattaraj et al., 2025). The AI-enabled solutions actively support circular supply chain models through their promotion of remanufacturing and refurbishment and closed-loop systems, especially in food and material waste sectors (Kumari et al., 2023). The technological advancements surpass waste reduction in landfills because they establish sustainable practices for resource conservation and environmental protection.

AI in Innovative Waste Management

The implementation of machine learning technology within AI enables waste management systems to achieve better material sorting efficiency and recycling process outcomes (Gupta et al., 2019). These technologies decrease pollution levels while boosting recovery rates, which results in better recycling outcomes (Chattaraj et al., 2025). The EcoSort AI system utilizes convolutional neural networks (CNNs) and IoT-enabled smart bins to automate garbage segregation, thereby enhancing sorting precision and increasing recycling rates (Joshi et al., 2024). Intelligent trash management systems that utilize IoT and machine learning optimize waste collection routes and schedules, significantly reducing fuel consumption and minimizing collection durations (Ogbolumani & Adekoya, 2025).

AI Applications in Food and Material Waste Reduction

Machine learning-inspired models, such as random forests, support the improvement of forecast precision and resource utilization in the food industry. These technologies promote sustainable consumption methods and help reduce food waste (Lo et al., 2024). Moreover, AI approaches to reducing food waste also encompass inventive inventory management, predictive analytics for meal planning, and automated waste reporting solutions. These strategies that enhance sustainable food production in food value chains have been encouraged (Wafi & Tumiran, 2024).

AI for Supply Chain Circularity

AI has the potential to open end-to-end supply chains, optimising the use of resources and minimising material loss. Generative AI methods may offer creative solutions for process automation and real-time decision-making, thereby reducing environmental footprints (Lo et al., 2024). AI for support in remanufacture and refurbishment may help improve the quality of recycled materials, and with it, the circular economy, promoting desirable long-term and viable eco-practices (Chattaraj et al., 2025).

AI in Resource Optimization

AI is changing how businesses optimize resources in processes such as logistics, transportation, warehouse management, and energy and water management." AI technologies can enable organizations to be more efficient, reduce resource wastage, and mitigate their environmental impacts (Chen et al., 2024).

AI in Logistics and Transportation Efficiency

AI-powered route optimization solutions enable logistics companies to decrease their fuel usage and environmental emissions. AI enables real-time data analysis and traffic prediction to select the most efficient routes that reduce both time consumption and CO_2 emissions (Mandal & Mohammed, 2024). AI-powered systems for last-mile delivery, using dynamic routing algorithms and predictive demand modeling, enable better delivery process management and operational efficiency improvement. The implementation of these improvements led to faster deliveries and decreased fuel usage because prominent logistics companies achieved significant return on investment (ROI) increases after implementing AI, according to Mandal & Mohammed (2024).

AI in Energy and Water Management

By utilizing renewable energy and grid distribution, AI is improving energy efficiency. Energy use is monitored and managed by AI-based solutions that track energy consumption and optimize operations, leading to reduced energy consumption, a crucial factor for sustainable urban development (Mhlanga & Shao, 2024). AI is also being employed to track water usage across regions and seek improvements in water-scarce areas. These AI-based systems contribute to water saving and sustainability in the way water resources are managed (Mhlanga & Shao, 2024). AI's role extends beyond waste reduction to broader resource optimization across logistics, manufacturing, and utilities

AI in Supply Chain Processes
AI is enhancing closed-loop manufacturing systems by streamlining material flows and cutting waste. AI-based models have demonstrated net improvements in resource productivity, as measured by lower raw material consumption and higher material recovery rates (Besigomwe, 2024). AI lets companies manage supply chain risk. Organizations can utilize this technology to mitigate risk in the dynamic world of supply and demand. These capabilities enable more anticipatory responses to disruptions by enhancing forecasting and anomaly detection, thereby reinforcing supply chain resilience (Grover, 2025).

AI in Promoting Sustainable Supply Chains
In the digital age, where the role of AI is becoming increasingly significant, the value of sustainable supply chains has never been more important. Firms are utilizing AI-related technologies to enhance their environmental practices, streamlining operations and meeting the growing needs of green consumers (Fang et al., 2023). Through AI in the supply chain, businesses can gain exposure to eco-friendly resources, search for sustainable suppliers, reduce their carbon footprints, and meet sustainability targets (Hasan, 2024).

AI-Enabled Green Procurement
AI solutions empower enterprises to leverage insights in their procurement decisions. With these technologies, the environmentally friendly materials and suppliers can be searched and selected, which is beneficial to resource conservation and waste reduction (Susithra et al., 2023). AI also helps with green procurement by enabling companies to assess the sustainability of their suppliers in granular detail. AI-powered methodologies, including natural language processing (NLP) and life cycle assessments (LCA), link procurement selections to ethical and sustainability practices (Chiu et al., 2024)

AI in Reducing Carbon Footprints
AI is increasingly being used to mitigate greenhouse gas emissions throughout supply chains. Linear programming and genetic algorithms are employed to optimize the process in terms of emissions and energy consumption (Naimi et al., 2013). Furthermore, real-time carbon emissions reporting is now made possible through the use of AI-driven digital tools with IoT sensors (Ameh, 2024). These solutions support the identification of where inefficiencies lie and provide timely recommendations that organisations can use to make immediate changes to improve their sustainability performance (Ameh, 2024; Donthi et al., 2024). Although there are opportunities for AI in supply chain sustainability, several challenges and ethical considerations must be addressed.

Comparing AI with Traditional Supply Chain Methods

AI-led SCM represents a revolutionary departure from traditional methodologies, particularly in enhancing responsiveness, efficiency, and decision-making rigor in complex environments. Traditional methods of SCM, which rely on manual decision-making, simple statistical models, and rule-based scheduling, are less effective against AI-fueled systems that primarily utilize large-scale data analytics to forecast, adapt, and optimize activities in real-time (Hamadi & Ekambaram, 2024).

One key area for improvement is demand forecasting . Conventional forecasting approaches (linear, time series, etc.) are not well equipped to handle market turbulence or external shocks. However, AI-based algorithms utilize past data and trend patterns of current data to make forecasts, taking into consideration contextual factors that enhance their accuracy and adaptability (Hamadi & Ekambaram, 2024; Nweje & Taiwo, 2025). There is, therefore, an improvement in accuracy, which minimises stockouts and obsolescence, thereby improving customer service and supply chain performance (Nweje & Taiwo, 2025b).

Likewise, AI has revolutionized the way we optimize inventory. Conventional stock management relies on fixed reorder points or periodic reviews, which are inflexible. AI enables dynamic inventory management by allowing organizations to adjust in response to predictive insights on the go, resulting in reduced holding costs and lead times (Logožar, 2024; Nweje & Taiwo, 2025).

Moreover, when it comes to operations, AI-powered systems in areas like warehouse management and route planning has revolutionized this space. While conventional methods rely significantly on workforce and rule-based routing, AI automates flows, reduces human errors, and, in turn, improves overall efficiency (Naveena et al., 2024); Kennedy et al., 2024). Another benefit is that AI-based predictive maintenance also reduces equipment downtime, thereby enabling a more robust supply chain ((Naveena et al., 2024). Challenges like this, however, can be significant for implementation outcomes. The quality and structure of data in AI systems rely on good-quality data and structured data; low-quality data reduces the effectiveness of even the most advanced models (Danach et al., 2024; Kennedy et al., 2024). Further, AI must be well integrated into pre-existing systems (which requires significant technical know-how and investment that many SMEs cannot afford). Ethical issues, including privacy, bias, and the explanation of AI decisions, are also important in the responsible deployment of these technologies (Kennedy et al., 2024).

Challenges and Ethical Considerations in AI-Driven Supply Chains

The implementation of AI in Supply Chain Management (SCM) can offer several advantages, including increased efficiency, predictive analytics, and improved decision-making. However, it is not without its challenges, and there are obvious ethical questions that organisations will have to address. Recent studies (e.g. Patil, 2025; Muvva, 2025; Danach et al., 2024) cite challenges related to data privacy, AI bias, the expense of rolling out these systems, and the need for high-quality data and seamless integration into legacy systems. Not only is integrating AI into supply chains challenging, but businesses will also need to make cautious and thoughtful adjustments to leverage AI effectively (Naidu et al., 2024).

Data Privacy and AI Bias in Supply Chain Decisions

The introduction of AI into supply chains has created opportunities for efficiency and informed decision-making. However, it has also raised new, complex ethical challenges related to data privacy, fairness, and traceability (Danach et al., 2024). As AI systems increasingly rely on large datasets that include personal information, doubts arise on the privacy risks entailed by AI systems. In this rapidly evolving process, regulations like GDPR and CCPA are struggling to keep pace and are failing to gain consumer confidence (Patil, 2025). These issues must be addressed to ensure the ethical and equitable application of AI solutions. Methods like enhanced data anonymization are gaining significance in safeguarding the identity of individuals when processing large datasets (Muvva, 2025). Establishing this code of ethics to ensure openness and equity is integral in fostering trust and gaining broad, long-term adoption of AI across supply chains in our world today.

Data Privacy Concerns

AI relies on enormous quality data to operate, but this dependence is a genuine concern. Enterprises also need to adhere to worldwide regulations, such as the GDPR (EU) and the California Consumer Privacy Act (CCPA), as well as region-specific regulations, which have made data management more complex (Mbah, 2024). To ensure that sensitive data is safeguarded, mechanisms such as privacy-by-design policies and state-of-the-art anonymization techniques must be implemented (Mbah, 2024; Shukla & Taneja, 2024).

AI Bias

The algorithms used in AI can, in unintended ways, reflect biases present in the data on which they are trained (Lee, 2024). This may lead to unfair decisions in sensitive issues, such as selecting suppliers and allocating resources, resulting in discrimination and unfairness (Naidu et al., 2024). To address this, organizations must implement bias detection and mitigation models to ensure that AI-governed decisions are fair, unbiased, and transparent (Muvva, 2025; Naidu et al., 2024).

For example, studies suggest that automating a retailer's order decisions in a decentralized supply chain via AI can lead to unintended negative consequences (Li and Li, 2022). In a normal retailer-supplier transaction, the retailer makes a decision to stock based on the current supply and demand, which is called regret bias. If such regret-biased retailers are replaced with AI systems that can automate the transactions, overall efficiency might not necessarily increase over time. Automation has the effect of increasing expected profits in centralized systems; however, in a decentralized supply chain, such a performance is not possible, where the profit margins are either very high or very low. In the worst-case scenario, they both lose, which underscores the ethical and strategic risks of implementing AI without considering behavioral context or the dynamics of the supply chain. (li and Li, 2022).

High Implementation Costs and Technology Barriers
A significant amount of money is required for the rollout of AI in supply chains. Costs involve purchasing advanced technology, training staff, and maintaining AI systems. Small and medium-sized enterprises (SMEs) often face high entry barriers, which may restrict their ability to enter a market alongside well-resourced and larger firms (Azari et al., 2024; Zhang, 2025).

Technological Complexity
Integrating AI into existing systems is rarely straightforward. In addition to non-technical limitations, such as scalability and compatibility with legacy systems, organisations have to deal with technical issues. This complexity can act as a barrier to the adoption of AI, particularly for organizations with inadequate IT infrastructure (Azari et al., 2024; Joel et al., 2024).

Dependence on Quality Data and Integration With Legacy Systems
The performance of AI systems highly depends on the quality of the data and the compatibility of these systems with legacy systems. Clean data is crucial for ensuring the proper and secure operation of AI models, and seamless integration with existing systems enables organizations to build upon previous investments. This dynamic of interplay is vital in unlocking the power of AI technologies (Jarrahi et al., 2022).

Quality Data
AI systems require accurate and reliable information to make predictive conclusions and informed decisions. Low-quality data can lead to errors, thereby eroding the benefits of AI in the supply chain. To be successful in such endeavours, organizations need to focus on the integrity of data and develop strong data governance procedures (Azari et al., 2024; Joel et al., 2024).

Integration with Legacy Systems
Many companies struggle to integrate AI into their existing legacy systems. This is key to realizing the potential of AI, but it means much work to ensure smooth operation and effective data exchange between old systems and new. It is almost impossible to fully reap the benefits of AI without the proper integration (Zhang, 2025).

Balancing Challenges with Opportunities

While adding AI to supply chains is not simple, the challenges are not overwhelming. By focusing on both technical innovation and ethical considerations, along with strategy development, an organization can minimize risk and channel the transformational power of AI. Responsible AI protecting privacy, addressing bias and quality, and integrating data are critical to enabling sustainable and efficient supply chains (Naidue, et al., 2024; Azari et al., 2024).

Conclusion and Future Work

The paper aims to explore how AI technology enables sustainable supply chain management through enhanced forecasting capabilities, improved resource management, and operational optimization. AI technologies enable companies to gain market superiority while simultaneously delivering advantages to the broader community. The success of AI implementation depends on resolving data quality issues, system integration problems, and ethical considerations. Future studies should investigate both the positive and negative impacts of AI on supply chain sustainability in various market environments and geographic regions. The combination of AI tools with close human monitoring, through hybrid approaches, could develop adaptive and context-aware supply chain decision-making mechanisms.

Acknowledgement

The authors acknowledge that all research, analysis, and writing were conducted independently without external assistance. Grammarly was used during the revision stage to support minor improvements in grammar, clarity, and readability, without contributing to the intellectual content or structure of the manuscript.

References

Ameh, B. (2024). Digital tools and AI: Using technology to monitor carbon emissions and waste at each stage of the supply chain, enabling real-time adjustments for sustainability improvements. *International Journal of Science and Research Archive*, 13(01), 2741–2754. https://doi.org/10.30574/ijsra.2024.13.1.1995

Azari, M., Arif, J., Moustabchir, H., & Jawab, F. (2025). Navigating Challenges and Leveraging Future Trends in AI and Machine Learning for Supply Chains. In R. Masengu, C. Tsikada, & J. Garwi (Eds.), *AI and Machine Learning Applications in Supply Chains and Marketing* (pp. 257-282). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6760-5.ch011

Besigomwe, K. (2024). AI-Driven Process Design for Closed-Loop Manufacturing. *Cognizance Journal*, *4*(12), 372–380. https://doi.org/10.47760/cognizance.2024.v04i12.035

Burgess, A. (2018). The executive guide to artificial intelligence: How to identify and implement applications for AI in your organization. London: AJBurgess Ltd.

Chattaraj, S., Mitra, D., Madan, A., Pellegrini, M., & Choudhury, T. (2025). Conclusion of AI Technologies for Enhancing Recycling Processes. In *AI Technologies for Enhancing Recycling Processes* (pp. 531-536). IGI Global Scientific Publishing.DOI: 10.4018/979-8-3693-7282-1.ch022

Chen, W., Men, Y., Fuster, N., Osorio, C., & Juan, À. A. (2024). Artificial Intelligence in Logistics Optimization with Sustainable Criteria: A Review. Sustainability, 16(21), 9145. https://doi.org/10.3390/su16219145

Chiu, M. C., Tai, P. Y., & Chu, C. Y. (2024). Developing a smart green supplier risk assessment system integrating natural language processing and life cycle assessment based on AHP framework: An empirical study. *Resources, Conservation and Recycling*, *207*, 107671.https://doi.org/10.1016/j.resconrec.2024.107671

Danach, K., El Dirani, A., & Rkein, H. (2024). Revolutionizing Supply Chain Management with AI: A Path to Efficiency and Sustainability. *IEEE Access*. 10.1109/ACCESS.2024.3474531

Donthi, R., Lakshmi, B., Srinivas, G., Sudhakar, S., Koneru, H., & Yekula, P. (2024). AI-driven numerical optimization for carbon footprint reduction and sustainable supply chain management in the fashion industry. *South Eastern European Journal of Public Health*, 1216-1222.https://mrecacademics.com/Images/FacultyPaper/1404329.pdf

Fang, B., Yu, J., Chen, Z., Osman, A. I., Farghali, M., Ihara, I., ... & Yap, P. S. (2023). Artificial intelligence for waste management in smart cities: a review. *Environmental Chemistry Letters*, *21*(4), 1959-1989. https://link.springer.com/article/10.1007/s10311-023-01604-3

Grover, N. (2025). AI-Enabled Supply Chain Optimization. *International Journal of Advanced Research in Science, Communication and Technology*, 28-44. https://hal.science/hal-04927862/

Gupta, P. K., Shree, V., Hiremath, L., & Rajendran, S. (2019). The use of modern technology in smart waste management and recycling: artificial intelligence and machine learning. *Recent advances in computational intelligence*, 173-188.

Hamadi, K. A., & Ekambaram, S. (2024, November). Supply Chain Management with AI. In *Abu Dhabi International Petroleum Exhibition and Conference* (p. D031S101R001). SPE.https://doi.org/10.2118/222930-ms

Hasan, M. R. (2024). AI-Enhanced Decision-Making for Sustainable Supply Chains: Reducing Carbon Footprints in the USA. arXiv preprint arXiv:2501.10364.

Hasan, M. R., Islam, M. R., & Rahman, M. A. (2025). Developing and implementing AI-driven models for demand forecasting in US supply chains: A comprehensive approach to enhancing predictive accuracy. *Edelweiss Applied Science and Technology*, *9*(1), 1045-1068. https://doi.org/10.55214/25768484.v9i1.4308

Jarrahi, M. H., Memariani, A., & Guha, S. (2022). The Principles of Data-Centric AI (DCAI). arXiv.Org, abs/2211.14611. https://doi.org/10.48550/arXiv.2211.14611

Joel, O. S., Oyewole, A. T., Odunaiya, O. G., & Soyombo, O. T. (2024). Leveraging artificial intelligence for enhanced supply chain optimization: a comprehensive review of current practices and future potentials. *International Journal of Management & Entrepreneurship Research*, *6*(3), 707-721.

Joshi, A., Tuljapurkar, A., Tupe, S., Tuptewar, L., Ghorpade, T., & Kundlik, U (2024). Eco Sort-Dry and Wet Waste Separator using Arduino.

Lee, G. J. (2024). Personal Data Protection Issues in the Era of Artificial Intelligence. *Journal of Medical Imaging*, *7*(1), 13–18. https://doi.org/10.31916/sjmi2024-01-03

Li, M., & Li, T. (2022). AI automation and retailer regret in supply chains. *Production and Operations Management*, *31*(1), 83-97. https://doi.org/10.1111/poms.1349

Lo, W., Yang, C. M., Zhang, Q., & Li, M. (2024). Increased productivity and reduced waste with robotic process automation and generative AI-powered IoE services. *Journal of Web Engineering*, *23*(1), 53-87.https://ieeexplore.ieee.org/abstract/document/10488437

Logožar, K. (2024). The role of Artificial Intelligence in Supply Chain Management: A systematic literature review. *ENTRENOVA – Conference Proceedings of the International Conference on Entrepreneurship, Innovation and Regional Development*. https://doi.org/10.54820/entrenova-2024-0027

Kennedy, G. W., Ikpe, S. A., Nassa, V. K., Prajapati, T., Dhabliya, D., & Dari, S. S. (2024). From tradition to technology: Utilization of AI and ML for digital transformation in supply chain management. In *AI and Machine Learning Impacts in Intelligent Supply Chain* (pp. 91-108). IGI Global Scientific Publishing.https://doi.org/10.4018/979-8-3693-1347-3.ch007

Kumari, N., Chaudhary, D., Kaur, H., & Yadav, A. L. (2023, June). Artificial intelligence in supply chain optimization. In *2023 International Conference on IoT, Communication and Automation Technology (ICICAT)* (pp. 1-6). IEEE. https://doi.org/10.1109/icicat57735.2023.10263631

Mandal, J., & Mohammed, I. A. (2024). Implementation of AI Transportation Routing in Reverse Logistics to Reduce CO2 Footprint. *International Journal of Supply Chain Management*, *9*(5), 1-12. Link

Mbah, G. O. (2024). Data privacy in the era of AI: Navigating regulatory landscapes for global businesses. *International Journal of Science and Research Archive*, , 13(02), 2040–2058 https://doi.org/10.30574/ijsra.2024.13.2.2396

Mhlanga, D., & Shao, D. (2025). AI-optimized urban resource management for sustainable smart cities. In *Financial inclusion and sustainable development in sub-saharan Africa* (pp. 96-116). Routledge.

Muvva, S. (2021). Ethical AI and Responsible Data Engineering: A Framework for Bias Mitigation and Privacy Preservation in Large-Scale Data Pipelines. *International Journal of Scientific Research in Engineering and Management*, *5*(09). https://doi.org/10.55041/ijsrem10633

Naidu, G., Narkhede, U., Shahare, P., Wankhede, P., Deshkar, R., & Gudadhe, A. (2024, November). Ethical Considerations in AI-Driven Supply Chain Management: A Review of Emerging Trends and Challenges. In *2024 2nd DMIHER International Conference on Artificial Intelligence in Healthcare, Education and Industry (IDICAIEI)* (pp. 1-7). IEEE. 10.1109/IDICAIEI61867.2024.10842944

Naimi, D., Ahmed, S., & Bouktir, T. (2013, May). An efficient optimisation method based on genetic algorithm applied to reduce greenhouse gases in power system. In *2013 International Conference on Control, Decision and Information Technologies (CoDIT)* (pp. 191-195). IEEE.https://doi.org/10.1109/CODIT.2013.6689542

Naveena, M., Ellaturu, N., Kumari, T. L., Bambuwala, S., & Rajalakshmi, M. (2024). AI-driven solutions for supply chain management. *Journal of Informatics Education and Research, 4*(2). https://doi.org/10.52783/jier.v4i2.849

Nweje, U., & Taiwo, M. (2025). Supply chain management: Balancing efficiency and environmental responsibility. *World Journal of Advanced Research and Reviews*, *25*(1), 1547-1564. https://doi.org/10.30574/wjarr.2025.25.1.0212

Nweje, U., & Taiwo, M. (2025b). Leveraging Artificial Intelligence for predictive supply chain management, focus on how AI- driven tools are revolutionizing demand forecasting and inventory optimization. *International Journal of Science and Research Archive*. https://doi.org/10.30574/ijsra.2025.14.1.0027

Ogbolumani, O. A., & Adekoya, M. (2025). Intelligent Waste Management Optimization Through Machine Learning Analytics. *Journal of Science Research and Reviews*, *2*(1), 7-26. https://doi.org/10.70882/josrar.2025.v2i1.25

Patil, D. (2024). Ethical Challenges In Industrial Artificial Intelligence Applications: Bias, Privacy, And Accountability. *Privacy, And Accountability (November 18, 2024)*.. https://doi.org/10.2139/ssrn.5057418

Shukla, R. P., & Taneja, S. (2024). Ethical considerations and data privacy in artificial intelligence. In *Integrating generative AI in education to achieve sustainable development goals* (pp. 86-97). IGI Global. Link

Susithra, S., Vasantha, S., & Subramanian, K. P. (2023). The Influence of Green Supply Chain Management Practices Using Artificial Intelligence (AI) on Green Sustainability. *Reinventing Technological Innovations with Artificial Intelligence*, 89-100.. https://doi.org/10.2174/9789815165791123010009

Wafi, M. A. A., & Tumiran, M. A. (2024). Harnessing Artificial Intelligence (AI) to Mitigate Food Waste: Innovative Strategies for Sustainable Consumption. *Malaysian Journal of Social Sciences and Humanities*, *9*(12), e003147. https://doi.org/10.47405/mjssh.v9i12.3147

Zhang, S. (2025). Research on Artificial Intelligence Applications in Global Supply Chains. *Advances in Economics, Management and Political Sciences*, *160*(1), 214–219. https://doi.org/10.54254/2754-1169/2025.19875