H.E.B.R

Hasanuddin Economics and Business Review – Vol 6:1 (2022), 24-36

The Advantages of Artificial Intelligence in Operational Decision Making

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Abstract

This research paper explores the advantages of artificial intelligence (AI) in operational decision making, focusing on the analysis of production processes, supply chains, and resources. The research highlights several advantages of AI in operational decision making. It empowers organizations to make data-driven decisions, reducing reliance on human intuition and biases. AI technologies can process vast amounts of data in real-time, enabling timely decision-making and facilitating agile operations. Moreover, AI can learn from historical data and continuously improve decision-making processes, leading to enhanced performance over time. The research method employed in this study is utilizing literature review as the data collection method. The literature review involved searching for relevant theories and examining findings from previous researchers, which served as the foundation for developing the analysis to discuss the research outcomes. This research underscores the significant advantages of AI in operational decision making, specifically in the areas of production processes, supply chains, and resource management. By leveraging AI technologies, organizations can achieve improved efficiency, reduced costs, and better overall performance. The findings of this study contribute to a better understanding of the transformative potential of AI and encourage its adoption in various operational domains.

Keywords: Artificial Intelligence; Decision Making; Production Process; Supply Chain; Resources

INTRODUCTION

The advent of the digital era has brought about a surge in growing abundance, diversity, and speed at which data is generated, along with the increasing capacity to process it. Inevitably, this has opened up opportunities for the emergence and advancement of innovative technological solutions, prominently including the progression of AI techniques (Brynjolfsson & McAfee, 2017). AI pertains to the capability of a system to accurately interpret vast amounts of data, acquire knowledge from this data, and apply these insights to achieve specific objectives and tasks by adapting flexibly (Kaplan and Haenlein, 2019).

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Artificial intelligence (AI) has had a significant impact on operational decision making across various domains.

Li et al. (2020) discusses the impact of AI on accounting business, accounting theory, and the ability of accounting personnel, highlighting how AI technologies have improved efficiency and accuracy in accounting processes. As a result, this facilitates accelerated, adaptable, and streamlined procedures, yielding superior-quality products with enhanced levels of personalization. This, in turn, boosts manufacturing productivity and enables industrial expansion. (Schlick, 2014).

Several studies emphasize the benefits of AI in enhancing human decision-making by pooling knowledge through artificial swarm intelligence (Metcalf et al., 2019), recognizing business patterns and analyzing data intelligently (Min, 2009), and facilitating better decision-making from the entrepreneurial perspective (Omari et al., 2021). Business intelligence, which incorporates AI technologies, has been found to positively impact firm performance and decision-making processes (Ozigbo, 2021). AI and data science have transformed the way businesses operate and changed the landscape of strategic decision making and operations (Lakhan, 2022). Marketing decision-making can also be enhanced by AI solutions throughout different stages of the marketing process (Ljepava, 2022). Overall, the studies reviewed highlight the potential of AI to improve decision making in various aspects of business.

As AI advances, it is imperative to establish supplementary guidelines and organizational frameworks to retain control over it while capitalizing on its capabilities and adaptability. It remains crucial for humans to retain ultimate authority in the implementation of AI-driven decisions, ensuring ethical conduct and consistently evaluating the consequences and ethical considerations stemming from AI decision-making (Lehner O.M. et al. 2022).

The objective of this paper is to contribute to the current body of literature concerning the influence of AI on managerial decision making, particularly in the context of production. The result of these influences hold substantial significance for decision makers in determining the level of support required to foster digital transformation and promote the adoption of AI.

This paper is organized as follows. First, we examine the role of AI in analyzing production processes. Next, the research delves into the significance of AI in supply chain management. Supply chains are intricate networks that involve multiple participants, and AI can offer valuable insights across various dimensions within this complex system. Furthermore, the study explores the role of AI in resource management. Efficient utilization of resources is crucial for businesses to achieve cost savings and sustainability.

METHODS

We performed a literature review, the articles search was conducted on Emerald, ScienceDirect, ResearchGate, and Google Scholar databases. The search process involved using specific keywords such as "Artificial Intelligence," "Decision Making," "Production Process," "Supply Chain,"

and "Resources," followed by the selection of articles that were relevant to the research topic.

A literature review can be broadly defined as a systematic approach to gathering and combining previous research in a cohesive manner (Baumeister & Leary, 1997). When performed with efficiency, a literature review acts as a strong research methodology that establishes a firm foundation for the progression of knowledge and the development of theories (Webster & Watson, 2002). By integrating perspectives and insights from multiple empirical studies, a literature review possesses the capacity to address research inquiries with a level of strength that exceeds that of individual studies.

ANALYSIS AND DISCUSSION

The Rise of Artificial Intelligence in Operation Decision Making

The COVID-19 pandemic has spurred the adoption and acceptance of AI in various domains. Studies have shown that has played a crucial role in open innovation and the adoption of Industry 4.0 by small and medium-sized enterprises (SMEs) during the pandemic (Madhavan et al., 2022). The accessibility of AI solutions has greatly expanded, making them readily available and affordable to entrepreneurs. This shift indicates that AI is no longer exclusive to large corporations, as it is now accessible to a wider range of businesses (Iansiti and Lakhani, 2020). The widespread accessibility of AI has the capacity to bring about a substantial influence on the advancement of entrepreneurship, creating fresh avenues for growth and fostering innovation.

The impact of AI on the business world has been transformative, revolutionizing, and unlocking new opportunities for innovation and growth has also been widely discussed in the literature. AI plays a vital role in successfully implementing Industry 4.0 and optimizing production processes (Javaid, M., et al. 2021). It enables efficient analysis and integration of large databases, facilitating real-time decision-making in production processes (Doguc, O. 2023). The role of AI in business models has also been explored. Start-ups and large companies alike have incorporated AI into their business models, contributing to improved efficiency and innovation (Pfau, W., Rimpp, P. 2020). AI enables companies to optimize their production processes, enhance decision-making, and gain a competitive edge in the market.

AI has been applied in quality management systems to harmonize rational and creative decision making (Paliukas & Savanevičienė, 2018). The role of AI in decision making extends to educational leadership, where it aids both individual and collective organizational decisions (Wang, 2021). Decision theory provides a framework for understanding how individuals or organizations make decisions in the face of uncertainty. It can be applied to analyze how artificial intelligence algorithms and models can improve decision-making processes by incorporating probabilistic reasoning, optimization techniques, and risk analysis.

AI has had a significant impact on operational decision making across various domains. Li et al. (2020) discusses the impact of AI on accounting

business, accounting theory, and the ability of accounting personnel, highlighting how AI technologies have improved efficiency and accuracy in accounting processes. As a result, this facilitates accelerated, adaptable, and streamlined procedures, yielding superior-quality products with enhanced levels of personalization. This, in turn, boosts manufacturing productivity and enables industrial expansion. (Schlick, 2014).

Analysing the Benefits of Artificial Intelligence in Production Processes

AI-based systems have the ability to analyze vast amounts of data, identify patterns, and optimize production workflows in the business world (Tariq et al., 2021; Wamba-Taguimdje et al., 2020; Min, 2009). With advancements in computing abilities, data-based AI, deep learning, cloud computing, and data management, AI has become a driving force for achieving operational excellence (Tariq et al., 2021). AI systems can improve automation, information flow, and transformation effects, leading to enhanced firm performance (Wamba-Taguimdje et al., 2020).

In supply chain management, AI can recognize business patterns, learn phenomena, seek information, and intelligently analyze data, resulting in improved decision-making processes and productivity (Min, 2009; Thatikonda, 2020). AI-powered machines can analyze large amounts of data and identify patterns that surpass human capabilities, leading to increased efficiency (Raju, 2023). Enabling automation in the gathering, transfer, and analysis of data grants managers enhanced access to a wealth of information, thereby promoting efficient and timely decision making. Moreover, incorporating automation and leveraging the availability of big data within a user-friendly decision support system facilitates effective adaptive management practices (Ditria et al., 2022). Overall, AI-based systems have proven to be beneficial in analyzing data, identifying patterns, and optimizing workflows for managers.

AI adoption in business has been shown to lead to increased productivity, minimized downtime, and improved quality control. The enhancement of machine computing capabilities serves as a significant driving force in achieving operational excellence through the utilization of AI (Tariq et al., 2021). Additionally, advancements in deep learning and cloud computing contribute to the integration of AI in operations, which can further enhance productivity and minimize downtime (Tariq et al., 2021). Organizations that adopt cognitive manufacturing practices, which leverage AI, benefit from enhanced knowledge management, improved product reliability, and increased productivity (Sira, 2022). AI's unique characteristics, like enhancing human labor and autonomous learning necessitate organizations to adopt novel approaches and models to fully harness the potential of AI (Plastino & Purdy, 2018). For marketing purposes, understanding consumer adoption of AI-generated information is crucial for improving trust in AI recommendations (Kim & Giroux, 2021). AI adoption is also prevalent in e-commerce businesses, more than 90% of productive organizations are considering the

adoption of enterprise-level AI (ThiDang & MinhNguyen, 2022). Overall, the adoption of AI in business has shown promise in increasing productivity, minimizing downtime, and improving quality control, but further research is needed to explore its social value and identify practical implications (Leszkiewicz et al., 2022).

The use of AI in predicting maintenance requirements for proactive measures and preventing unexpected breakdowns in business has gained significant attention in recent years. Various studies have explored the application of AI techniques in different industries. Mohan et al. (2023) proposes an AI-based predictive maintenance technique to enhance the availability rate and overall equipment effectiveness (OEE) in a plant that has adopted Total Productive Maintenance (TPM) practices during the transformation of Industry 4.0. The study focuses on using AI to predict breakdowns in advance, allowing for timely preventive measures. Galar & Kumar (2023) discuss the use of AI in predictive maintenance without providing specific details but acknowledge its relevance in this field.

This aligns with the findings of (Arena et al., 2021), who conducted a literature review focused on predictive maintenance in the automotive industry, emphasizing the utilization of AI techniques. Imran et al. (2023) explore the application of AI in marine corrosion prediction and detection. They emphasize the use of AI in the development of prediction models is aimed at preventing unexpected failures during the detection and maintenance of corrosion. Dhyani (2021) investigates AI-driven maintenance strategies for predicting equipment failure in manufacturing plants, while Hrnjica & Softic (2020) highlight the value of explainable AI in manufacturing and its contribution to predicting maintenance tasks.

Furthermore, Waltersmann et al. (2021) mention predictive maintenance as one of the typical use cases of AI applications for increasing resource efficiency in manufacturing companies. Ramu (2022) also emphasizes how predictive maintenance aims to minimize costly and unexpected breakdowns, allowing manufacturers to plan maintenance around their production schedule. In summary, the literature supports the use of AI in predicting maintenance requirements, enabling proactive measures, and preventing unexpected breakdowns in various industries. AI techniques have been shown to improve availability rates, OEE, fault diagnosis, and corrosion detection.

Leveraging Artificial Intelligence for Optimal Supply Chain Management

Similarly, in the field of supply chain management, the adoption of AI decision-making technology has the potential to drive the evolution of conventional supply chains into intelligent supply chains. This transformation enables intelligent management practices and fosters the advancement and enhancement of the entire supply chain ecosystem (Lei, Y. et al. 2023).

Several studies highlight the various applications of AI in different aspects of the supply chain, such as planning, prediction, purchasing, procurement, transportation,

distribution, quality control, warehouse management, and inventory tracking (Hlyal, 2022; Patel, 2022). AI, coupled with automated digital recording systems, can facilitate analysis of large datasets for better conservation and management decisions. AI has the ability to leverage other innovative technologies such as digitization of patient records, and genetic data to enhance healthcare innovation (Arora, 2020). Integrating AI into digital healthcare systems can support clinical decision-making, manage chronic disease burden, and contain rising healthcare costs (Shinners et al., 2019).

AI enables the analysis of unprecedented amounts of digital data, opening up new avenues for theory generation and addressing associated challenges (Pagani & Champion, 2021). Furthermore, AI is being adopted across various industries, including in supply chains that leverage blockchain technology for traceability and intelligence (Karadgi et al., 2021)

The use of AI in supply chain management is not limited to traditional supply chain domains; it extends to sectors like financial management, marketing management, and performance management (Naved, 2022). Moreover, AI and Big Data Analytics have the potential to significantly enhance supply chain resilience and resource management (Zamani et al., 2022). AI technology can also coordinate the earnings and environmental performance of supply chain enterprises through interactions with all participants (Jiang, 2023). Despite the popularity of AI in supply chains, there is a need for conceptual frameworks to categorize and review the subtopics of AI that can contribute to different subfields of supply chain management (Brintrup, 2020). The review of selected studies in this field offers valuable insights for operations managers and policymakers (Dhamija & Bag, 2020). Overall, these studies demonstrate the potential of leveraging AI to optimize supply chain management in various industries and domains. For example, in the pharmaceutical industry, the adoption of AI in supply chain management has been found to improve patient outcomes and drive the success of pharmaceutical companies (Guo, 2023).

AI possesses the capability to examine data, forecast demand, optimize logistics and transportation routes, and detect inefficiencies within the supply chain. (Mohsen, 2023). However, the adoption of AI in organizations is influenced by social and technical factors, and human insight is still required to effectively utilize AI-supported methods (Smit, D. et al, 2023). Additionally, AI-guided predictive analytics, supplemented by data analytics, can provide critical input for decision-making processes (Shaap, 2020).

Furthermore, AI can play a crucial role in optimizing supplier selection in agrifood supply chains, aiming to increase sustainability and resilience. By utilizing AI techniques, such as data analysis and pattern recognition, the selection process can be streamlined, and criteria for assessing suppliers can be analyzed and refined (Alcívar, A. Z., et al. 2020).

AI can enhance supply chain resilience by proactively identifying potential disruptions and proposing

alternative solutions (Modgil et al., 2021; Naz et al., 2021; Sullivan & Wamba, 2022; Kanti, 2022; Gupta et al., 2022). The adoption of AI in supply chain risk management allows firms to proactively mitigate global supply chain risks (Cardinali & Giovanni, 2022), improve supply chain management efficiency (Victor, 2023), and optimize supply chain processes (Domanjko, 2022).

In the context of post-COVID-19 supply chains, AI play a crucial role in identifying, evaluating, and mitigating risks, while also offering valuable managerial insights. (Kanti, 2022). By interpreting and evaluating multidimensional data in dynamic situations, such as supply chain disruptions, AI can help evaluate alternative solutions (Gupta et al., 2022). Moreover, AI technology has proven to be a valuable asset in diverse sectors such as the food industry, where it aids in improving the quality and efficiency of restaurants, café's, online food delivery chains, hotels, and food outlets through the use of data science and fitting algorithms for sales prediction Kumar, I. 2021). Overall, AI can make a substantial contribution to minimizing the likelihood of supply chain disruptions and bolstering the resilience of the supply chain.

Enhancing Resource Management through Artificial Intelligence

AI is capable of analyzing data related to resource consumption, identifying inefficiencies, and proposing optimization strategies. This ability is supported by various research studies. For example, Liu & Ma (2013) conducted an analysis of the energy consumption structure of Shandong Province, finding a positive relationship between economic growth and energy consumption. Letaief et al. (2022) highlighted the resource-intensive nature of state-of-the-art AI systems, which can lead to latency, energy consumption, network congestion, and privacy concerns. According to Hu (2023), the focus was placed on the technical components of current machine learning algorithms that play a role in optimizing resource management and decreasing energy consumption. AI can also contribute to resource allocation and communication improvement, as demonstrated by (Victor, 2023).

Furthermore, AI can leverage data analysis to identify valuable waste streams and materials for recovery and recycling. Zakariyya et al. (2019) presented techniques to reduce the computational cost of running AI algorithms, while Nam et al. (2023) tackled the complex resource planning problem associated with AI workloads. These studies collectively highlight the role of AI as a powerful tool for analyzing data, managing resources, and optimizing processes (Porras & Daugherty, 2022; Sasikumar et al., 2022).

The future of AI systems research is expected to focus on reducing resource consumption, managing transient resource availability, and optimizing resource usage in specialized hardware (Krishnan et al., 2019). However, resource planning for AI workloads remains a complex optimization problem that requires significant time and effort (Nam et al., 2023). Finally, once reliable data is available, AI and machine learning techniques can determine

patterns and behavioral models of urban systems (Minerva & Crespi, 2021).

CONCLUSION

This study has explored the benefits of incorporating artificial intelligence (AI) into decision-making processes in operations, focusing specifically on its impact on production processes, supply chains, and resource management. Through an analysis of relevant literature, several key findings have emerged.

First, the integration of AI technologies in operational decision making offers numerous benefits. Automating data collection, transfer, and processing enables managers to access a wealth of information, leading to more timely and effective decision making. The use of AI-driven decision support systems with user-friendly interfaces promotes adaptive management practices and facilitates data-driven decision making. AI-driven systems have the capability to process immense volumes of data, identify patterns, and optimize production workflows. This leads to increased productivity, minimized downtime, and improved quality control. Additionally, AI can help managements predict maintenance requirements, enabling proactive measures and preventing unexpected breakdowns, leading to resource efficiency and cost savings.

Furthermore, AI improves operational efficiency by facilitating expedited, adaptable, and streamlined processes. With heightened levels of personalization or customization, organizations can produce higher-quality goods tailored to meet specific customer demands. AI also plays a crucial role in increasing manufacturing productivity, optimizing resource allocation, and streamlining supply chain operations. Through AI-driven predictive analytics, organizations can forecast demand, optimize inventory levels, and streamline logistics operations. AI can also identify potential risks, such as disruptions in the supply chain, and propose alternative solutions to mitigate these risks.

AI also plays a significant role in resource management. It can analyze data related to resource consumption, identify inefficiencies, and propose optimization strategies. It can also assist in energy management, waste reduction, and environmental impact assessment, enabling organizations to align their operations with sustainable practices.

Furthermore, the wider availability of AI solutions has ensured that businesses of different sizes can now access and utilize this technology, breaking down the barriers that previously limited its adoption to large corporations. This increased accessibility levels the playing field, enabling SME’s to leverage the benefits of AI in operational decision making and foster industrial growth.

However, as organizations embrace AI in decision making, it is crucial to address the challenges and ethical considerations that accompany its adoption. Issues such as data privacy, algorithmic bias, and transparency in decision making must be carefully managed to ensure responsible and ethical use of AI technologies.

In conclusion, this research highlights the transformative potential of AI in operational decision making. By leveraging AI technologies,

organizations can improve operational efficiency, optimize resource allocation, and enhance decision-making capabilities. The outcomes of this study add to the expanding knowledge base in this domain and offer valuable insights for individuals involved in decision-making, emphasizing the importance of supporting digital transformation and promoting the ethical use of AI to unlock the full potential of operational decision making in today's dynamic business landscape.

REFERENCE

Alcívar, A. Z., Verdecho, M., Alfaro-Saiz, J. (2020). Assessing and Selecting Sustainable and Resilient Suppliers In Agri-food Supply Chains Using Artificial Intelligence: A Short Review. *Boosting Collaborative Networks 4.0*, 501-510. https://doi.org/10.1007/978-3-030-62412-5_41

Arena, F., Collotta, M., Luca, L., Ruggieri, M., Termine, F. (2021). Predictive Maintenance in the Automotive Sector: A Literature Review. *MCA*, 1(27), 2. https://doi.org/10.3390/mca27010002

Arora, A. (2020). Conceptualising Artificial Intelligence As a Digital Healthcare Innovation: An Introductory Reviews;. *MDER*, (Volume 13), 223-230. https://doi.org/10.2147/mder.s262590

Brintrup, A. (2020). Artificial Intelligence In the Supply Chain. *The Oxford Handbook of Supply Chain Management*, 209-236. https://doi.org/10.1093/oxfordhb/9780190066727.013.24

Cardinali, P. G., Giovanni, P. D. (2022). Responsible Digitalization Through Digital Technologies and Green Practices. *Corp Soc Responsibility Env*, 4(29), 984-995. https://doi.org/10.1002/csr.2249

Dhamija, P., Bag, S. (2020). Role of Artificial Intelligence in Operations Environment: a Review And Bibliometric Analysis. *TQM*, 4(32), 869-896. https://doi.org/10.1108/tqm-10-2019-0243

Dhyani, B. (2021). Predicting Equipment Failure in Manufacturing Plants: An Ai-driven Maintenance Strategy. *MSEA*, 2(70), 1326-1334. https://doi.org/10.17762/msea.v70i2.2324

Ditria, E. M., Buelow, C., González-Rivero, M., Connolly, R. M. (2022). Artificial Intelligence and Automated Monitoring for Assisting Conservation of Marine Ecosystems: A Perspective. *Front. Mar. Sci.*, (9). https://doi.org/10.3389/fmars.2022.918104

Doguc, O. (2023). How Will Metaverse and Ai Change Traditional Marketing Techniques? *Handbook of Research on Consumer Behavioral Analytics in Metaverse and the Adoption of a Virtual World*, 68-88. https://doi.org/10.4018/978-1-6684-7029-9.ch004

Domanjko, Ž., Perko, I. (2022). Artificial Intelligence Effects On Inventory Planning Of Sensitive Products. *6th FEB International Scientific Conference 2022*. https://doi.org/10.18690/um.epf.5.2022.42

Guo, W. (2023). Exploring the Value of Ai Technology in Optimizing And Implementing Supply Chain Data For Pharmaceutical Companies. *IST*, 3(2), 1-6.

https://doi.org/10.56397/ist.2023.05.01

Gupta, S., Modgil, S., Meissonier, R., Dwivedi, Y. K. (2022). Artificial Intelligence and Information System Resilience to Cope with Supply Chain Disruption. *IEEE Trans. Eng. Manage.*, 1-11. https://doi.org/10.1109/tem.2021.3116770

Hlyal, M. (2022). A Review of Artificial Intelligence Applications in Supply Chain. *ITM Web Conf.*, (46), 03001. https://doi.org/10.1051/itmconf/20224603001

Hrnjica, B., Softic, S. (2020). Explainable AI in Manufacturing: a Predictive Maintenance Case Study. *IFIP Advances in Information and Communication Technology*, 66-73. https://doi.org/10.1007/978-3-030-57997-5_8

Hu, Y. (2023). Energy-aware Resource Management in Internet of Vehicles Using Machine Learning Algorithms. *JHS*, 1(29), 27-39. https://doi.org/10.3233/jhs-222004

Iansiti, M. and Lakhani, K. (2020), Competing in the Age of AI: Strategy and Leadership when Algorithms and Networks Run the World, *Harvard Business Review Press*, Boston, MA.

Imran, M. M. H., Jamaludin, S., Ayob, A. F. M., Ali, A. A. I. M., Ahmad, S. Z. A. S., Akhbar, M. F. A., … & Mohamed, S. B. (2023). Application of Artificial Intelligence in Marine Corrosion Prediction and Detection. *JMSE*, 2(11), 256. https://doi.org/10.3390/jmse11020256

J. Webster, R.T. Watson (2002). Analyzing the Past to Prepare for the Future: Writing a Literature Review. *Management Information Systems Quarterly*, 26 (2002), p. 3

Javaid, M., Haleem, A., Singh, R. P., Suman, R. (2021). Artificial Intelligence Applications for Industry 4.0: a Literature-based Study. J. Ind. Intg. *Mgmt*., 01(07), 83-111. https://doi.org/10.1142/s2424862221300040

Jiang, W., Jiang, F., Zhang, Z., Chen, Z. (2023). Study On Digital Technology Collaboration Strategy of Supply Chain Enterprises Based On Evolutionary Game. *Proceedings of the 4th Management Science Informatization and Economic Innovation Development Conference, MSIEID* 2022, December. https://doi.org/10.4108/eai.9-12-2022.2327699

Kanti, P. S., Sadia, R., Suchismita, D. (2022). Artificial Intelligence Adoption in Supply Chain Risk Management: Scale Development and Validation. *HCMCOUJS - Economics and Business Administration*, 2(12), 15-32. https://doi.org/10.46223/hcmcoujs.econ.en.12.2.2142.2022

Kaplan, Andreas & Haenlein, Michael. (2018). Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. *Business Horizons*. 62. https://doi.org/10.1016/j.bushor.2018.08.004

Karadgi, S., Kulkarni, V., Doddamani, S. T. (2021). Traceable and Intelligent Supply Chain Based On Blockchain and Artificial Intelligence. J. *Phys.: Conf. Ser.*, 1(2070), 012158. https://doi.org/10.1088/1742-6596/2070/1/012158

Kim, J., Giroux, M. (2021). When Do You Trust AI? the Effect of Number Presentation Detail On Consumer Trust and Acceptance of AI

Recommendations. Psychology; Marketing, 7(38), 1140-1155. https://doi.org/10.1002/mar.21498

Kumar, I., Rawat, J., Mohd, N., Husain, S. (2021). Opportunities of Artificial Intelligence and Machine Learning In The Food Industry. Journal of Food Quality, (2021), 1-10. https://doi.org/10.1155/2021/4535567

Lakhan, N. (2022). Applications of Data Science and Ai In Business. IJRASET, 5(10), 4115-4118. https://doi.org/10.22214/ijraset.2022.43343

Lehner, O.M., Ittonen, K., Silvola, H., Ström, E. and Wührleitner, A. (2022), "Artificial Intelligence Based Decision-Making in Accounting And Auditing: Ethical Challenges And Normative Thinking", Accounting, Auditing & Accountability Journal, Vol. 35 No. 9, pp. 109-135. https://doi.org/10.1108/AAAJ-09-2020-4934

Lei, Y., Qiaoming, H., Tong, Z. (2023). Research On Supply Chain Financial Risk Prevention Based On Machine Learning. Computational Intelligence and Neuroscience, (2023), 1-15. https://doi.org/10.1155/2023/6531154

Leszkiewicz, A., Hörmann, T., Krafft, M. (2022). Smart Business and The Social Value of AI. Advanced Series in Management, 19-34. https://doi.org/10.1108/s1877-636120220000028004

Letaief, K. B., Shi, Y., Lu, J., Lu, J. (2022). Edge Artificial Intelligence for 6G: Vision, Enabling Technologies, and Applications. IEEE J. Select. *Areas Commun.*, 1(40), 5-36. https://doi.org/10.1109/jsac.2021.3126076

Liu, J., Ma, J. (2013). Based On the Grey Relational Analysis of Energy Consumption Structure of Shandong Province. *AJFST*, 11(5), 1497-1501. https://doi.org/10.19026/ajfst.5.3373

Ljepava, N. (2022). AI-enabled Marketing Solutions in Marketing Decision Making: Ai Application In Different Stages Of Marketing Process. *TEM Journal*, 1308-1315. https://doi.org/10.18421/tem113-40

Madhavan, M., Wangtueai, S., Sharafuddin, M. A., Chaichana, T. (2022). The Precipitative Effects of Pandemic On Open Innovation of SMEs: a Scientometrics And Systematic Review Of Industry 4.0 And Industry 5.0. *Journal of Open Innovation: Technology, Market, and Complexity*, 3(8), 152. https://doi.org/10.3390/joitmc8030152

Metcalf, L. E., Askay, D. A., Rosenberg, L. B. (2019). Keeping Humans in the Loop: Pooling Knowledge Through Artificial Swarm Intelligence To Improve Business Decision Making. *California Management Review*, 4(61), 84-109. https://doi.org/10.1177/0008125619862256

Min, H. (2009). Artificial Intelligence in Supply Chain Management: Theory and Applications. International *Journal of Logistics Research and Applications*, 1(13), 13-39. https://doi.org/10.1080/13675560902736537

Minerva, R., Crespi, N. (2021). Digital Twins: Properties, Software Frameworks, and Application Scenarios. *IT Prof.*, 1(23), 51-55. https://doi.org/10.1109/mitp.2020.2982896

Modgil, S., Singh, R. K., Hannibal, C. (2021). Artificial Intelligence for Supply Chain Resilience: Learning from Covid-19. *IJLM*, 4(33), 1246-1268. https://doi.org/10.1108/ijlm-02-2021-0094

Mohan, R., Roselyn, J. P., Uthra, R. A. (2023). Lstm Based Artificial Intelligence Predictive Maintenance Technique for Availability Rate and Oee Improvement In A TPM Implementing Plant Through Industry 4.0 Transformation. *JQME*. https://doi.org/10.1108/jqme-07-2022-0041

Mohd Naved (2022). A Review of the Use of Machine Learning And Artificial Intelligence in Various Sectors. *MR*, 4(5), 26-31. https://doi.org/10.46253/j.mr.v5i4.a3

Naz, F., Kumar, A., Majumdar, A., Agrawal, R. (2021). Is Artificial Intelligence an Enabler of Supply Chain Resiliency Post Covid-19? An Exploratory State-of-the-art Review for Future Research. *Oper Manag Res*, 1-2(15), 378-398. https://doi.org/10.1007/s12063-021-00208-w

Ozigbo, Nathaniel. (2021). Business Intelligence Systems Supporting Sustainability on Firm's Decision-Making Processes and Performance. *International Journal of Advanced Research in Statistics, Management and Finance*. 8. 64-75. https://doi.org/10.48028/iiprds/ijarsmf.v8.i1.05

Pagani, M., Champion, R. (2021). Introduction to Artificial Intelligence for Sustainable Value Creation. *Artificial Intelligence for Sustainable Value Creation*. https://doi.org/10.4337/9781839104398.00008

Paliukas, V., Savanevičienė, A. (2018). Harmonization Of Rational and Creative Decisions In Quality Management Using Ai Technologies. *Economics and Business*, 1(32), 195-208. https://doi.org/10.2478/eb-2018-0016

Pfau, W., Rimpp, P. (2020). Ai-enhanced Business Models for Digital Entrepreneurship. *Digital Entrepreneurship*, 121-140. https://doi.org/10.1007/978-3-030-53914-6_7

Plastino, E., Purdy, M. (2018). Game Changing Value from Artificial Intelligence: Eight Strategies. *SL*, 1(46), 16-22. https://doi.org/10.1108/sl-11-2017-0106

Porras, E. T., Daugherty, B. (2022). Bitcoin and Ethics in A Technological Society. *Blockchain Potential in AI*. https://doi.org/10.5772/intechopen.96798

Raju, P. V. M., Sumallika, T. (2023). The Impact Of Ai In the Global Economy And Its Implications In Industry 4.0 Era. *inf tech educ soc*, 2(18), 53-62. https://doi.org/10.7459/ites/18.2.05

Ramu, K., Ramachandran, M., Saravanan, V., Selvam, M., Soundharaj, S. (2022). Big Data Analytics for Mobility Prediction and Its Classification. *Data Analytics and Artificial Intelligence*, 2(2), 74-81. https://doi.org/10.46632/daai/2/2/2

Sasikumar, A., Ravi, L., Kotecha, K., Saini, J. R., Vijayakumar, V., Manogaran, G. (2022). Sustainable Smart Industry: a Secure and Energy Efficient Consensus Mechanism for Artificial Intelligence Enabled Industrial Internet Of Things. *Computational Intelligence and*

Neuroscience, (2022), 1-12. https://doi.org/10.1155/2022/1419360

Shinners, L., Aggar, C., Grace, S., Smith, S. T. (2019). Exploring Healthcare Professionals' Understanding and Experiences of Artificial Intelligence Technology Use In The Delivery of Healthcare: An Integrative Review. *Health Informatics J*, 2(26), 1225-1236. https://doi.org/10.1177/1460458219874641

Smit, D., Eybers, S., van der Merwe (2023). A. Exploring the Social And Technical Factors In Organisational Ai Adoption: A Systematic Literature Review. *EPiC Series in Computing*. https://doi.org/10.29007/8tgz

Sullivan, Y. W., Wamba, S. (2022). Artificial Intelligence, Firm Resilience to Supply Chain Disruptions, and Firm Performance. *Proceedings of the Annual Hawaii International Conference on System Sciences*. https://doi.org/10.24251/hicss.2022.719

Tariq, M., Poulin, M. J., Abonamah, A. A. (2021). Achieving Operational Excellence Through Artificial Intelligence: Driving Forces and Barriers. *Front. Psychol*., (12). https://doi.org/10.3389/fpsyg.2021.686624

Thatikonda, D. (2020). Ai-supply Chain Risk Management During Pandemic. *EJECE*, 6(4). https://doi.org/10.24018/ejece.2020.4.6.252

Thi Dang, N., Minh Nguyen, T. (2022). Impact of Artificial Intelligence on E-commerce Businesses In Ho Chi Minh City. *Glob Acad J Econ Buss*, 4(4), 146-151. https://doi.org/10.36348/gajeb.2022.v04i04.006

Waltersmann, L., Kiemel, S., Stuhlsatz, J., Sauer, A., Miehe, R. (2021). Artificial Intelligence Applications for Increasing Resource Efficiency in Manufacturing Companies. *A Comprehensive Review. Sustainability*, 12(13), 6689. https://doi.org/10.3390/su13126689

Wamba-Taguimdje, S., Wamba, S. F., Kamdjoug, J. R. K., Wanko, C. E. T. (2020). Influence of Artificial Intelligence (AI) On Firm Performance: the Business Value Of AI-based Transformation Projects. *BPMJ*, 7(26), 1893-1924. https://doi.org/10.1108/bpmj-10-2019-0411

Wang, Y. (2021). Artificial Intelligence in Educational Leadership: a Symbiotic Role Of Human-artificial Intelligence Decision-making. *JEA*, 3(59), 256-270. https://doi.org/10.1108/jea-10-2020-0216

Zakariyya, I., Al-Kadri, M. O., Kalutarage, H. K., Petrovski, A. (2019). Reducing Computational Cost in Iot Cyber Security: Case Study of Artificial Immune System Algorithm. *Proceedings of the 16th International Joint Conference on E-Business and Telecommunications*. https://doi.org/10.5220/0008119205230528

Zamani, E. D., Smyth, C., Gupta, S., Dennehy, D. (2022). Artificial Intelligence and Big Data Analytics for Supply Chain Resilience: A Systematic Literature Review. *Ann Oper Res*. https://doi.org/10.1007/s10479-022-04983-y