Review

# Technology integration in supply chain management: A systematic literature review on driving marketing success and efficiency

Esther Daniel[1], Muhammad Shamsuddeen Musa[1], Farida Balarabe[2], Nuru Yakubu Umar[3], Usman Yahya Ibrahim[4], Aminu Adamu Ahmed[5,*], Ahmad Adamu Ahmad[6]

[1] Department of Management Information Technology, Abubakar Tafawa Balewa University, Bauchi 772204, Nigeria

[2] Department of Marketing, Faculty of Social and Management Sciences, Adamawa State University, Mubi 650101, Nigeria

[3] Department of Business Administration, Abubakar Tatari Ali Polytechnic, Bauchi 740001, Nigeria

[4] Department of Business Administration, Gombe State University, Gombe 760214, Nigeria

[5] Department of Information Communication Technology, Federal Polytechnic Kaltungo, Kaltungo 770117, Nigeria

[6] Department of Economics, Faculty of Social Sciences, Sa'adu Zungur University, Gusau 240001, Bauchi State, Nigeria

**\* Corresponding author:** Aminu Adamu Ahmed, aminuaa.inkil@gmail.com

**Abstract:** This study examines how supply chain management (SCM) uses information technology (IT) and how that integration affects marketing effectiveness. IT plays a critical role in improving supply chain management (SCM) procedures as organisations aim for operational excellence in a world going digital. The current body of knowledge regarding the connection between IT integration in supply chain management (SCM) and marketing outcomes is compiled in this study through the use of a systematic literature review (SLR). Important conclusions show that using IT solutions, including cloud computing and advanced analytics, greatly enhances the communication, accessibility, and reactivity of data in marketing initiatives. In order to maximise the allocation of marketing resources and drive client interaction, the conversation highlights the revolutionary potential of IT. The study ends with proposals for additional research to examine the changing landscape of IT in SCM as well as tips for practitioners.

**Keywords:** information technology; supply chain management; marketing efficiency; integration; data accessibility; customer engagement

## 1. Introduction

In today's fast-paced corporate climate, supply chain management (SCM) and information technology (IT) integration has become essential to improving operational efficiency and competitiveness. Organisations are using IT more and more to improve data-driven decision-making, expedite SCM processes, and facilitate communication since the introduction of digital technology [1]. The potential of IT to provide visibility throughout the supply chain, encourage cooperation between supply chain partners, and enable quick responses to market developments highlight the significance of IT in SCM [2]. The integration of IT systems has proven vital for firms to retain resilience and agility as they handle issues such supply chain interruptions, globalisation, and unpredictable consumer demands [3]. Beyond simple automation, IT plays a crucial role in supply chain management (SCM) by enabling the conversion of conventional supply chains into digital ecosystems [4]. By facilitating real-time data sharing, predictive analytics, and improved collaboration, technologies like cloud computing, the Internet of Things (IoT), and big data analytics have completely reshaped supply chain operations [5]. For example, cloud-based systems enable smooth stakeholder

communication, while IoT devices offer insightful data on logistics performance and inventory levels [6]. According to Hazen et al. [7], the integration of technology not only lowers operating expenses but also improves responsiveness to client demands, which in turn leads to higher customer satisfaction. For businesses looking to maximise return on investment (ROI) and optimise resource allocation, marketing efficiency is essential. Businesses may reach target audiences more successfully, cut down on waste, and react quickly to changes in the market thanks to efficient marketing operations [8]. By giving marketers quick and reliable information on consumer behaviour, preferences, and supply chain dynamics, IT integration within SCM directly affects marketing efficiency [9]. Consequently, businesses may create more focused marketing campaigns, manage inventories better, and improve customer interaction tactics, all of which can boost revenue and market share [10].

The purpose of this study is to investigate how IT integration affects supply chain management effectiveness. By achieving these goals, the study hopes to provide insightful observations to the continuing conversation about how supply chain management, technology, and marketing strategies interact. Specifically, the objectives are to:

1) Examine the current state of IT integration in SCM techniques across diverse industries;
2) Identify the most important IT tools and technologies that improve supply chain operations to increase marketing efficiency;
3) Examine the Effects on Marketing and Supply Chain Plans;
4) Emphasise the IT Integration's Restrictions and Challenges.

## 2. Literature review

Information technology's (IT) revolutionary effects on operational performance and marketing efficiency are highlighted in the literature on IT integration in supply chain management (SCM). An overview of IT integration in supply chains, an analysis of how IT affects marketing outcomes, and a list of research gaps are all included in this part.

### 2.1. Overview of IT integration in supply chain

The term "IT integration" in supply chains describes the smooth integration of digital technology to improve responsiveness, visibility, and coordination of supply chain operations [1]. Modern technological developments like big data analytics, cloud computing, and the Internet of Things (IoT) have completely changed how supply chains operate. For example, real-time data exchange across supply chain partners is made possible by cloud-based platforms, which promotes improved decision-making and collaboration [2]. Furthermore, IoT devices offer vital information on inventory levels and logistical performance, enabling businesses to streamline their processes [6]. By combining these technologies, businesses can more quickly adapt to changes in the market and client expectations while also improving supply chain agility and streamlining procedures [4].

## 2.2. Effects of IT on marketing outcomes

Marketing results are significantly impacted by the IT integration in SCM. IT helps marketers understand consumer behaviour and preferences better by facilitating data accessibility and analysis [11]. This deeper comprehension enables the creation of more focused marketing plans, which in turn raises consumer satisfaction and engagement [10]. Moreover, IT makes inventory management easier, guaranteeing that goods are available when and where customers need them—a critical component of keeping a competitive edge in the marketplace [7]. Research has indicated that companies who successfully integrate IT into their supply chains see enhanced marketing outcomes, such as increased revenue and market share [12]. In the digital age, marketers are realising that one of the most important factors in achieving success is the capacity to react swiftly to shifting consumer demands and preferences.

## 2.3. Gaps in existing research

There are still a number of gaps in the literature despite the rising volume of research on IT integration in SCM and its effects on marketing efficiency. First, the majority of current research concentrates on particular businesses or technologies, which restricts the applicability of findings across different contexts [13]. More thorough research is required to examine how different IT technologies interact and how this affects supply chain and marketing performance as a whole. Furthermore, despite the fact that the advantages of IT integration are widely known, organisations' obstacles and problems during the implementation process have received less attention [8]. Understanding these difficulties is critical for establishing successful methods to boost IT adoption in SCM. Lastly, since many studies concentrate on short-term advantages without taking sustainability and continuous performance improvements into consideration, future research should examine the long-term effects of IT integration on marketing results [1]. Closing these gaps will lead to a more comprehensive knowledge of how IT, SCM, and marketing efficiency relate to one another.

## 3. Methodology

The methodology used in this study is described in this section, with particular emphasis on the thorough literature review technique, the inclusion and exclusion criteria for studies, and the data extraction and analysis procedure, as indicated in **Table 1**. A more flexible examination of the body of current knowledge is made possible by the complete literature review technique, which combines aspects of traditional and systematic literature reviews within a structured framework. This method allows for the discovery of important themes, trends, and gaps in the literature without the strict limitations of a fully systematic review, which makes it especially helpful in disciplines where research is fast moving. First, a thorough search was conducted across five pertinent databases (see **Figure 1**): Scopus, Web of Science, ScienceDirect, Research Gate, and Google Scholar, using keywords related to IT integration, supply chain management, and marketing efficiency from the year 2015–July 2024 (see **Figure 2**).
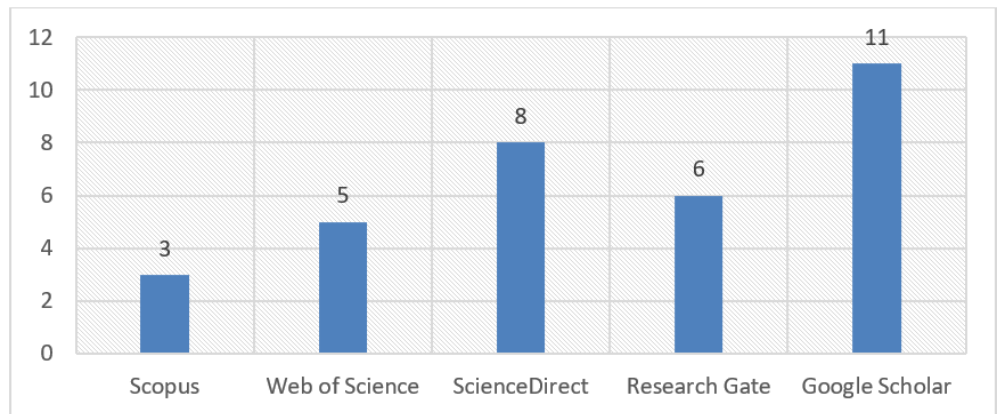
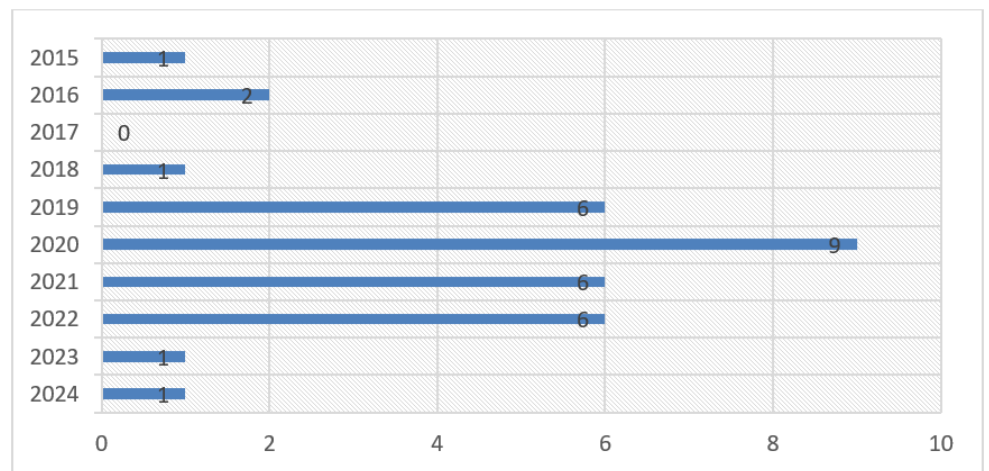**Figure 1.** Literature samples based on five research databases.



**Figure 2.** Literature sample over a period of ten years.

This systematic literature review focuses on IT integration, supply chain management, and marketing efficiency within a specific timeframe (2015–2024). The 33 inclusion and exclusion criteria are crucial for filtering relevant literature, ensuring high-quality, pertinent studies are included. The inclusion criteria guide the screening process, determining which studies are assessed for eligibility. The PRISMA flow diagram serves as a visual representation of the entire review process, mapping out the number of records identified, included, and excluded, along with the reasons for exclusions. The initial search results from five databases feed into the first stage of the PRISMA flow diagram, where the total number of records identified is documented. The final number of studies included in the review is derived from applying the inclusion criteria to the screened studies, a critical endpoint in the PRISMA flow diagram. The inclusion criteria, along with **Figures 1** and **2**, are integral to the methodology of the systematic literature review, providing clarity on the selection process, enhancing the quality of the review, and ensuring the findings are based on a robust and relevant body of literature.

The search was limited to studies published in the last ten years to ensure the inclusion of the most current findings. To ensure the relevance and quality of the studies included in the review, as shown in **Table 1**, 33 specific literature inclusion and exclusion criteria were established.

Scopus, Web of Science, Science Direct, Research Gate, and Google Scholar were the five research databases that were thoroughly searched before the systematic review process started, yielding a total of 805 articles (see **Figure 3**). Scopus (114), Web of Science (153), Science Direct (212), Research Gate (121), and Google Scholar (162) were the databases that contributed. This wide range of sources made sure that the literature was thoroughly examined, increasing the likelihood of an exhaustive and representative evaluation. The 43 articles that were judged appropriate for inclusion in the study were chosen after a thorough filtration process that evaluated the articles' validity and dependability after the identification step.
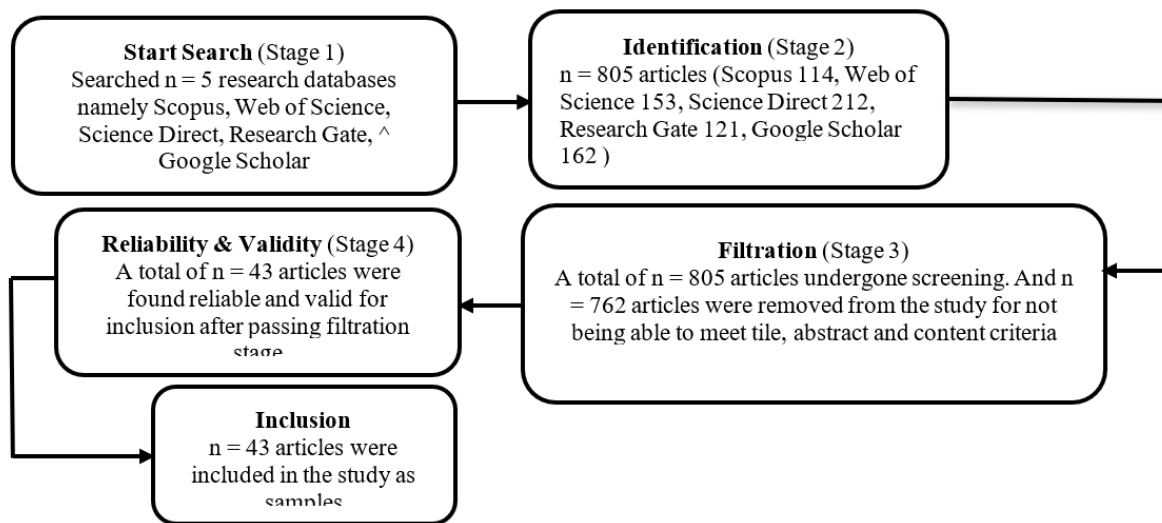


**Figure 3.** PRISMA flow diagram for literature sample.

This critical evaluation is necessary to make sure that the conclusions are supported by solid research and adhere to PRISMA principles, which place a strong emphasis on repeatability and transparency in systematic reviews. The decrease from 805 to 43 papers highlights how crucial this procedure is for getting rid of research that doesn't fit the requirements. A strong dedication to upholding the review's integrity is evident in the final inclusion of 43 articles, each of which adds to a more complex understanding of how supply chain management's use of technology affects marketing effectiveness. All things considered, the PRISMA flow diagram, which depicts the systematic review process, emphasizes the need for an organized approach to literature reviews in order to guarantee that findings are supported by solid data and advance the field's understanding.

**Table 1.** Criteria for inclusion and exclusion from the sample.

| Inclusion Criteria: Studies were included if… | Exclusion Criteria: Studies were excluded if… |
|---|---|
| Focused on the integration of IT in supply chain management | Did not provide empirical data |
| Examined the effects of IT on marketing outcomes | Were opinion pieces or editorials |
| Were published in peer-reviewed journals | Focused solely on theoretical frameworks without practical implications |
| Were written in English | Were published prior to 2014 |

The strict selection procedure was designed to guarantee that the evaluation included pertinent, high-caliber research that advances our knowledge of the relationship between marketing effectiveness, supply chain management, and IT. In order to extract data from each chosen study, pertinent information had to be methodically gathered. This information included authorship, publication year, research design, important findings, and practical implications. To make it easier to capture this data consistently and accurately, a standardised data extraction form was created. A thematic analysis was carried out after data extraction to find recurring themes and patterns in all of the investigations. The retrieved data was coded and categorised as part of this analysis to represent the key conclusions about IT integration in SCM and how it affects marketing results. After that, the analysis's findings were combined to give a thorough summary of the state of the field's research, emphasising both the studies' contributions and the gaps that still needed to be filled. This approach not only advances the goals of the research but also adds to the conversation on how IT might improve marketing and supply chain efficiency.

## 4. Results and discussion

This section presents the main conclusions from the literature review, analyses the role of IT tools in improving marketing efficiency, looks at the implications for businesses and marketing strategies, and talks about the difficulties and constraints of IT integration in supply chains. It is based on the analysis in **Table 2**.

### 4.1. Key findings from the current state of existing literature

The examined literature as shown in **Table 2**, reveals significant insights into the integration of IT in supply chains and its impact on marketing outcomes. Companies that effectively integrate IT solutions tend to experience higher customer satisfaction and operational efficiency [7]. Utilizing big data and advanced analytics allows businesses to better predict demand and manage inventories, which reduces costs and enhances service levels [2]. Additionally, IT integration fosters improved communication and collaboration among supply chain participants, essential for creating an agile and responsive supply chain [4]. These findings underscore the strategic importance of IT in modern supply chain management.

**Table 2.** The current state of literature on IT integration in SCM practices.

| No. Studies | IT Tools & Tech. | Source |
|---|---|---|
| 2 | Big Data for Supply Chain Management | [14,15] |
| 13 | AI for Supply Chain Management | [16–28] |
| 1 | AI and Social Media for Supply Chain Management | [29] |
| 7 | AI and Machine Learning Algorithms for Supply Chain | [3,30–35] |
| 6 | Internet of Things | [4,11,14,15,36–40] |
| 2 | Blockchain for Supply Chain Management | [41,42] |
| 2 | Supply Chain Optimization | [43,44] |

## 4.2. The role of IT tools in enhancing marketing efficiency

IT tools are crucial for enhancing supply chain and marketing efficiency by providing marketers with valuable insights for informed decision-making. Technologies such as marketing automation platforms and big data analytics enable businesses to track consumer interactions and preferences, facilitating the creation of personalized marketing campaigns [9]. Social media analytics further help companies understand customer sentiment and engagement, guiding product development and promotional strategies [10]. By leveraging these IT solutions, businesses can strengthen customer relationships, ultimately boosting sales and brand loyalty [5].

## 4.3. Consequences for marketing and supply chain plans

The integration of IT in supply chains significantly influences companies' marketing strategies. Businesses that adopt IT solutions gain a competitive edge by enhancing their adaptability to shifting client demands and market conditions [1]. For instance, real-time data allows companies to adjust marketing efforts based on consumer behavior and trends, leading to more efficient resource allocation and improved return on investment (ROI) [6]. Insights from IT integration can also inform strategic decisions regarding product offerings, pricing, and distribution channels, emphasizing the need for organizations to prioritize IT investments to enhance overall performance and marketing capabilities [13].

## 4.4. Case studies

Case Study 1: Zara's IT Integration in Supply Chain Management

One of the top fast-fashion retailers, Zara, is a prime example of the substantial advantages of incorporating information technology (IT) systems into marketing and supply chain management plans. The business's operations demonstrate how cutting-edge IT technologies and real-time data analytics facilitate quick adjustments to shifting consumer preferences and fashion trends. Zara successfully predicts demand and optimizes inventory levels by utilizing artificial intelligence (AI) and predictive analytics. This helps the company minimize surplus stock while guaranteeing product availability. Their design-to-distribution vertical integration strategy is bolstered by real-time data that enables prompt production and distribution modifications, enabling the launch of new product lines every two to three weeks. Additionally, Zara demonstrates the effectiveness of technology and marketing by using consumer feedback to inform pricing and design tactics. Zara's thorough approach to IT integration has strengthened its competitive edge in the quick-paced fashion market, despite obstacles like integrating new technologies and worries about data security [45].

Case Study 2: Amazon's Use of IT in Supply Chain Management

Amazon is another prime example of how cutting-edge technology like artificial intelligence (AI) and machine learning are revolutionizing supply chain management and marketing tactics. Amazon improves customer experience through targeted marketing and increases logistics efficiency by using these technologies into its supply chain management (SCM). To enable precise demand forecasting and efficient inventory management, the business uses machine learning algorithms to evaluate vast

amounts of data on consumer behavior, inventory levels, and market trends. Amazon's capacity to foresee product demand helps them avoid stockouts and overstocks, which is crucial for upholding their promise of quick delivery [46]. By enabling customized marketing tactics like product recommendations based on past purchases and browsing history, AI also improves user engagement and increases sales and customer happiness. In order to minimize shipping times and expenses, Amazon also optimizes its logistics by using algorithms that examine weather and traffic patterns to identify the most effective delivery routes. All things considered, Amazon's clever application of IT integration in supply chain management not only improves customer satisfaction but also expedites operations, underscoring the vital connection between technology and successful marketing [46].

## 4.5. Challenges and limitations of IT integration

Organizations can benefit greatly from integrating information technology (IT), but there are drawbacks as well, especially for small and medium-sized businesses (SMEs). The high cost of deploying sophisticated IT systems is one of the main challenges, as it may be unaffordable for many SMEs [8]. Furthermore, employee resistance and possible operational disruptions are frequently caused by the difficulty of integrating new technology with current systems [7]. When new technologies are introduced, workers may feel intimidated by them, worrying that their jobs will become obsolete or that they would need to learn new skills. This can lower employee engagement and morale [47]. Effective change management techniques that actively engage staff in the integration process while offering sufficient training and support must thus be given top priority by organizations [48]. Additionally, when businesses gather and examine enormous volumes of client data, there are privacy and data security issues that raise the possibility of breaches [9]. To reduce these risks, organizations must put strong security measures in place and adhere to data protection laws [49]. Furthermore, an organization's culture must be in harmony for IT integration to be successful; a culture that is resistant to change can impede the adoption of new technology [50]. Strong leadership backing is also crucial; in order to inspire staff, leaders must promote IT integration and allot the required funds [47]. Additional difficulties arise from the intricacy of integrating legacy systems, which frequently leads to higher implementation costs and longer implementation schedules [51]. Last but not least, firms may find it difficult to keep up with the quick speed of technological development, therefore proactive technology management is required to maximize expenditures [52]. Businesses can improve their chances of integrating IT successfully and accomplishing their strategic goals by tackling these organizational and technological obstacles.

## 5. Conclusion

This section provides a summary of the most important findings from the literature review, helpful suggestions for professionals working in the subject, and possible avenues for further investigation. Enhancing marketing efficiency has become dependent on the integration of supply chain management (SCM) and information technology (IT). According to the literature, businesses can significantly

increase their operational effectiveness, customer happiness, and overall competitiveness by leveraging IT solutions properly. Key findings show that IT improves decision-making skills, permits real-time data analysis, and promotes improved collaboration amongst supply chain partners. Additionally, the efficient application of IT facilitates the creation of customised marketing plans, which are necessary to satisfy the changing needs of customers in the modern digital economy. However, organisations still face considerable obstacles to overcome, including high implementation costs, complicated integration, and worries about data security.

The findings offer numerous useful tips for practitioners hoping to capitalise on supply chains and marketing's gains from IT integration. First, businesses should spend money on the IT tools and infrastructure that best suit their unique operating requirements and marketing objectives. This involves optimising resource allocation and improving customer engagement through the implementation of CRM systems, marketing automation platforms, and advanced analytics. Second, in order to handle possible employee resistance and guarantee a seamless integration of new technology into current workflows, training and change management programs need to be given top priority. Businesses should also embrace a data-driven approach to decision-making, using information obtained from IT systems to guide their product and marketing offers. In order to continuously develop and adapt in a business environment that is changing quickly, regular review of IT performance and its effect on marketing outcomes is also necessary.

Future studies should concentrate on a number of important topics, especially as they relate to small and medium-sized businesses (SMEs), in order to improve our understanding of how information technology (IT) integrates supply chain and marketing strategies. Examining methods that SMEs might use to get around financial obstacles and yet take advantage of technology breakthroughs is essential given the high implementation costs of IT. Research should look into affordable IT solutions designed for SMEs, like open-source software and cloud-based services, which can lower initial investments and continuing maintenance expenses. Longitudinal studies are also required to evaluate the long-term impacts of IT integration on marketing efficacy and business performance, offering SMEs insights into sustainable growth. Furthermore, it is crucial to look at the particular difficulties SMEs have putting IT solutions into practice because, in contrast to larger firms, they frequently confront significant hurdles, like a lack of resources and experience. Comprehending these obstacles might result in the creation of focused support structures and educational initiatives that enable SMEs to efficiently utilize IT. Furthermore, given the growing concerns around data privacy, it is imperative to investigate the ethical implications of data gathering and usage in marketing efforts. SMEs can use data-driven marketing strategies while navigating the challenges of data ethics with the support of this research. Finally, research that compare different industries can offer a more comprehensive view of how distinct customer behaviors and market dynamics affect IT integration methods. Future studies can advance a more sophisticated understanding of how IT might improve supply chain marketing effectiveness by concentrating on these areas, especially for SMEs looking to maintain their competitiveness in an increasingly digital environment.

**Author contributions:** Conceptualization, MSM, ED, AAA (Aminu Adamu Ahmed) and FB; methodology, AAA (Aminu Adamu Ahmed); software, AAA (Aminu Adamu Ahmed); validation, NYU, UYI and ED; formal analysis, FB; investigation, MSM and AAA (Ahmad Adamu Ahmad); resources, ED; data curation, FB; writing—original draft preparation, AAA (Aminu Adamu Ahmed); writing—review and editing, MSM, ED and AAA (Aminu Adamu Ahmed); visualization, UYI; supervision, NYU. All authors have read and agreed to the published version of the manuscript.

**Conflict of interest:** The authors declare no conflict of interest.

# References

1. Gunasekaran A, Subramanian N, Rahman S. Big data in operations and supply chain management: Trends and future directions. International Journal of Production Research. 2021; 59(6): 1790-1800.
2. Kamble SS, Gunasekaran A, Sharma R. A framework for implementing Industry 4.0 in manufacturing: A case study approach. International Journal of Production Research. 2020; 58(20): 6448-6464.
3. Amellal I, Amellal A, Seghiouer H, et al. An integrated approach for modern supply chain management: Utilizing advanced machine learning models for sentiment analysis, demand forecasting, and probabilistic price prediction. Decision Science Letters. 2024; 13(2024): 237-248.
4. Wang Y, Gunasekaran A, Ngai EWT. Big data in logistics and supply chain management: A review and future research directions. International Journal of Production Research. 2022; 60(6): 1853-1871.
5. Chae B. The role of information technology in supply chain management: A review and future directions. International Journal of Production Economics. 2021; 229: 107843.
6. Zhang Y, Zhao X, Zhang Z. The impact of IoT on supply chain management: A literature review. Supply Chain Management: An International Journal. 2023; 28(1): 15-31.
7. Hazen BT, Boone CA, Ezell JD, et al. Data quality for data science, predictive analytics, and big data in supply chain management: An introduction to the problem and suggestions for research and applications. International Journal of Production Economics. 2020; 250: 107636.
8. Chaffey D, Ellis-Chadwick F. Digital marketing: Strategy, implementation and practice, 7th ed. Pearson Education; 2019.
9. Li H, Chen X, Sun Y. Data privacy and security issues in the era of big data: A comprehensive review. Journal of Computer Information Systems. 2021; 61(1): 1-9.
10. Mohammed A, Katt M. Social media analytics for marketing decisions: A framework and future research agenda. Journal of Marketing Management. 2022; 38(3-4): 339-361.
11. Li H, Li Y, Liu Y. The impact of big data analytics on supply chain performance: The mediating role of supply chain agility. Journal of Business Research. 2021; 124: 681-691.
12. Chae B. Supply chain management and technology: A review and future directions. International Journal of Production Economics. 2021; 232: 107963.
13. Kumar A, Singh R, Gupta R. Digital transformation in supply chain management: A literature review and future directions. International Journal of Production Research. 2022; 60(12): 3725-3752.
14. Lin X. Network Security Technology of Supply Chain Management Based on Internet of Things and Big Data. Ahmad S, ed. Computational Intelligence and Neuroscience. 2022; 2022: 1-12. doi: 10.1155/2022/7753086
15. Tan WC, Sidhu MS. Review of RFID and IoT integration in supply chain management. Operations Research Perspectives. 2022; 9: 100229. doi: 10.1016/j.orp.2022.100229
16. Alomar MA. Performance Optimization of Industrial Supply Chain Using Artificial Intelligence. Bhardwaj A, ed. Computational Intelligence and Neuroscience. 2022; 2022: 1-10. doi: 10.1155/2022/9306265
17. Baryannis G, Validi S, Dani S, et al. Supply chain risk management and artificial intelligence: state of the art and future research directions. International Journal of Production Research. 2018; 57(7): 2179-2202. doi: 10.1080/00207543.2018.1530476

18. Belhadi A, Kamble S, Fosso Wamba S, et al. Building supply-chain resilience: an artificial intelligence-based technique and decision-making framework. International Journal of Production Research. 2021; 60(14): 4487-4507. doi: 10.1080/00207543.2021.1950935

19. Dash R, Rebman C, Kar UK. Application of Artificial Intelligence in Automation of Supply Chain Management. Journal of Strategic Innovation and Sustainability. 2019; 14(3): 43–53.

20. Dumitrascu O, Dumitrascu M, Dobrotă D. Performance Evaluation for a Sustainable Supply Chain Management System in the Automotive Industry Using Artificial Intelligence. Processes. 2020; 8(11): 1384. doi: 10.3390/pr8111384

21. Fosso Wamba S, Queiroz MM, Guthrie C, et al. Industry experiences of artificial intelligence (AI): benefits and challenges in operations and supply chain management. Production Planning & Control. 2021; 33(16): 1493-1497. doi: 10.1080/09537287.2021.1882695

22. Hassouna M, El-henawy I, Haggag R. A Multi-Objective Optimization for Supply Chain Management using Artificial Intelligence (AI). International Journal of Advanced Computer Science and Applications. 2022; 13(8). doi: 10.14569/ijacsa.2022.0130817

23. Helo P, Hao Y. Artificial intelligence in operations management and supply chain management: an exploratory case study. Production Planning & Control. 2021; 33(16): 1573-1590. doi: 10.1080/09537287.2021.1882690

24. Kersten W, Blecker T, Ringle CM. Artificial Intelligence and Digital Transformation in Supply Chain Management: Innovative Approaches for Supply Chains. Hamburg International Conference of Logistics. 2019; 470–482.

25. Luo S, Xing M, Zhao J. Construction of Artificial Intelligence Application Model for Supply Chain Financial Risk Assessment. Scientific Programming. 2022; 2022: 1-8. doi: 10.1155/2022/4194576

26. Nahr GJ, Nozari H, Sadeghi ME. Green supply chain based on artificial intelligence of things (AIoT). International Journal of Innovation in Management, Economics and Social Sciences. 2021; 1(2): 56-63. doi: 10.52547/ijimes.1.2.56

27. Pournader M, Ghaderi H, Hassanzadegan A, et al. Artificial intelligence applications in supply chain management. International Journal of Production Economics. 2021; 241: 108250. doi: 10.1016/j.ijpe.2021.108250

28. Toorajipour R, Sohrabpour V, Nazarpour A, et al. Artificial intelligence in supply chain management: A systematic literature review. Journal of Business Research. 2021; 122: 502-517. doi: 10.1016/j.jbusres.2020.09.009

29. Khatua A, Khatua A, Chi X, et al. Artificial Intelligence, Social Media and Supply Chain Management: The Way Forward. Electronics. 2021; 10(19): 2348. doi: 10.3390/electronics10192348

30. Alshammari I, Parimala M, Ozel C, et al. Spherical Linear Diophantine Fuzzy TOPSIS Algorithm for Green Supply Chain Management System. Journal of Function Spaces. 2022; 2022: 1-12. doi: 10.1155/2022/3136462

31. Duan Z. Prepayment Model of Supply Chain Financing Based on Internet of Things and Machine Learning Algorithm. Computational Intelligence and Neuroscience. 2022; 2022: 1-12. doi: 10.1155/2022/9320692

32. Duc DN, Nananukul N. A Hybrid Methodology Based on Machine Learning for a Supply Chain Optimization Problem. Journal of Physics: Conference Series. 2020; 1624(5): 052022. doi: 10.1088/1742-6596/1624/5/052022

33. Lee YH, Golinska-Dawson P, Wu JZ. Mathematical Models for Supply Chain Management. Mathematical Problems in Engineering. 2016; 2016: 1-4. doi: 10.1155/2016/6167290

34. Lin H, Lin J, Wang F. An innovative machine learning model for supply chain management. Journal of Innovation & Knowledge. 2022; 7(4): 100276. doi: 10.1016/j.jik.2022.100276

35. Wei Y. A Machine Learning Algorithm for Supplier Credit Risk Assessment Based on Supply Chain Management. International Transactions on Electrical Energy Systems. 2022; 2022: 1-11. doi: 10.1155/2022/4766597

36. Kishore A, Aeri M, Grover A, et al. Secured supply chain management system for fisheries through IoT. Measurement: Sensors. 2023; 25: 100632. doi: 10.1016/j.measen.2022.100632

37. Pal K, Yasar AUH. Internet of Things and Blockchain Technology in Apparel Manufacturing Supply Chain Data Management. Procedia Computer Science. 2020; 170: 450-457. doi: 10.1016/j.procs.2020.03.088

38. Rizwan A, Karras DA, Kumar J, et al. An Internet of Things (IoT) Based Block Chain Technology to Enhance the Quality of Supply Chain Management (SCM). Mathematical Problems in Engineering. 2022; 2022: 1-12. doi: 10.1155/2022/9679050

39. Wu M. Optimization of E-Commerce Supply Chain Management Process Based on Internet of Things Technology. Complexity. 2021; 2021(1). doi: 10.1155/2021/5569386

40. Zhang F, Gong Z. Supply Chain Inventory Collaborative Management and Information Sharing Mechanism Based on Cloud Computing and 5G Internet of Things. Mathematical Problems in Engineering. 2021; 2021: 1-12. doi: 10.1155/2021/6670718

41. Sharma V, Ramirez-Asis E, Ahmad AJ, et al. On the Internet of Things, Blockchain Technology for Supply Chain Management (IoT). Wireless Communications and Mobile Computing. 2022; 2022: 1-14. doi: 10.1155/2022/9185731

42. Wei A, Lee L, Toyoda K, et al. Blockchain-enabled carbon emission management system in a multi-tier supply chain. Procedia CIRP. 2023; 116: 233–238.

43. Alkahtani M. Supply Chain Management Optimization and Prediction Model Based on Projected Stochastic Gradient. Sustainability. 2022; 14(6): 3486. doi: 10.3390/su14063486

44. Mohsen BM. Developments of Digital Technologies Related to Supply Chain Management. Procedia Computer Science. 2023; 220: 788-795. doi: 10.1016/j.procs.2023.03.105

45. García A, López M, Martínez J. The impact of information technology on supply chain management: A case study of Zara. Journal of Fashion Marketing and Management. 2022; 24(3): 453-467.

46. Kumar A, Singh R. The role of artificial intelligence in enhancing supply chain management: A case study of Amazon. International Journal of Supply Chain Management. 2021; 10(1): 123-135.

47. Kotter JP. Leading change. Harvard Business Review Press; 1996.

48. Hiatt JM. ADKAR: A model for change in business, government, and our community. Prosci Research; 2006.

49. Parker C, Fischoff S. Data protection and privacy: The importance of compliance in today's digital age. Journal of Business Ethics. 2019; 155(4): 1075-1090.

50. Schein EH. Organizational culture and leadership, 4th ed. Wiley; 2010.

51. Huang KF, Hsu WT, Wu YJ. The impact of big data on supply chain management: A systematic literature review and future research directions. Industrial Management & Data Systems. 2019; 119(6): 1201-1222.

52. Bharadwaj A, El Sawy OA, Pavlou PA, et al. Digital business strategy: Toward a next generation of insights. MIS Quarterly. 2013; 37(2): 471-482.