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Article

RETAIL PROCUREMENT 4.0 STRATEGIC: IMPACT OF PREDICTIVE B2B PLATFORMS ON PURCHASE DECISIONS AND BUSINESS GROWTH

Neeraj Kumar[1],Dr. Swapnil Undale[2*],Shailesh Pandey[3]

[1]Dr. Vishwanath Karad MIT World Peace University, Pune, India, Email:neerajbhatt002@gmail.com ORCID: 0009-0005-5510-4629
[2*]School of Business,Dr. Vishwanath Karad MIT World Peace University, Pune, India, (Corresponding Author) Email: swapnil.undale@mitwpu.edu.in ORCID: 0000-0003-4533-7953
[3]Jaipuria Institute of Management, Indore,Email id-research.shail084@gmail.com
Orchid id: -0000-0002-6210-6623

Abstract: Background: The Background and introduction of the study has greatly impacted how Retailers are operating their procurement and supply chain. AI powered Predictive Business-to-Business (B2B) procurement platforms have improved decision making capabilities, Supplier Relationship Management, Demand Forecasting and operational efficiencies. Retail Procurement 4.0 brings about a revolution in the process of retail procurement, moving from conventional procurement models to intelligent, information-driven procurement systems.
Objective: In this study, we seek to assess the strategic role of predictive B2B procurement platforms in purchase decisions and business expansion in the retail sector.
Methodology: The research design used was quantitative cross sectional approach of research. A structured questionnaire wsa used to collect data; with procurement managers, supply chain professionals, retail executives and B2B platform users. The following factors were evaluated: predictive analytics use, procurement efficiency, supplier performance assessment, purchase decision accuracy, cost optimization, and business growth indicators. Chi-square test and correlation analysis using SPSS Ver. 27.0 was conducted.
Results: The findings state that the predictive B2B procurement platforms had a major impact on purchase decision-making accuracy, supplier selection efficiency, inventory management and procurement responsiveness. Organizations that used predictive procurement technologies performed better in the following areas than organizations that used traditional procurement systems: operational performance, procurement costs, demand forecasting and business growth.
Conclusion: In the retail industry, predictive B2B procurement platforms are vital for boosting procurement efficiency, making better purchase decisions, and fostering sustainable business growth. By adopting Procurement 4.0 technologies, companies can make bold and wiser decisions on the available data, and enhance operational agility in this rapidly evolving market.
Keywords: Retail Procurement 4.0; Predictive Analytics; B2B Platforms; Purchase Decisions; Business Growth; Supply Chain Management.

1. INTRODUCTION

Global Perspective

Digital technologies have been changing business operations in all industries in a remarkable way, paving the way for Industry 4.0 and its innovations. The current available technologies of 21st centuries like AI (Artificial Intelligence), IoT (Internet of Things), Cloud Computing, etc. can combine to bring about most important advances in this transformation. This combination may also include, Big Data Analytics, ML (Machine Learning), etc. in the activities of material procurement and related logistics. Till the end of 20th century, procurement was considered as a transactional process, which deals mainly with the cost of goods sold and services offered. **Althabatah et al (2023)** But now, procurement is becoming more and more of a strategic role that directly impacts operational efficiency,

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competitive edge and business growth in the modern organizations. Organizations around the world are turning to predictive analytics and digital Business-to-Business (B2B) platforms to enhance procurement decision-making and optimize Logistics. **Verhoef et al (2023)**

The obvious and popular B2B platforms leverage on historical data, market intelligence, supplier information and sophisticated analytical models to predict future demand, assess procurement risks, analyse supplier performance and aid strategic procurement decisions. These platforms can help organizations move from reactive procurement to proactive and data-driven decision-making. With the growing volatility in the market, evolving customer demands, and global supply chain disruptions, existing technologies of procurement need major advances so as to improve the resilience and sustainability of organizations. **WEF (2024)** The B2B eCommerce and digital procurement market has grown significantly in the last decade. Retail, manufacturing, healthcare, and logistics organizations are putting a lot of money into implementing predictive procurement systems in order to gain better visibility and control of procurement processes, cut procurement expenses, streamline supplier interactions and optimize inventory management. Research indicates that data-driven procurement can lead to more accurate forecasting, better supplier relationships, quicker purchasing cycles, and better business performance. As such, Procurement 4.0 is now being seen as an important factor in achieving digital transformation and strategic business success. **UNCTAD (2024)**

Indian Scenario

Growth of Indian retail market is uncomparable at global level, bolstered by economic growth, technological advancement, rising consumer demand, and fast digitalization. Also the retail sector of India contributes heavily in GDP, and is witnessing a significant transformation due to shift towards adopting digital technologies with sophisticated procurement methods. **Government of India (2024)** The value of predictive B2B platforms is becoming more evident in the retail sector, where companies are leveraging them for optimizing procurement processes, managing suppliers, optimizing inventory, and making well-informed purchasing choices. **Cha et al (2025)** Cloud based procurement solutions, digital marketplaces and AI-powered analytics software are helping to drive Procurement 4.0 strategies forward among large retail chains and small to medium enterprises. Although many organizations are using predictive procurement technologies, they are still struggling with issues such as implementation, data integration, technological readiness and user acceptance. **Ghadge et al (2020)**; **Dubey et al (2022)** Then the advantages of predictive B2B platforms are well recognized, there is scarce empirical evidence of the extent to which they are influencing the purchase decision making process and the impact on the business growth of the retail sector in India. Studies on technological adoption, supply chain digitalization, and the development of e-commerce have been conducted but some researchers that focused on the strategic results of predictive procurement systems. **Kache et al (2020)**

It is therefore important that those in the industry and policy makers understand how such platforms impact the effectiveness of purchasing, supplier selection, procurement efficiency and organisational performance. In today's highly competitive, changing customer expectations and fast-changing business climates, retail firms need to implement innovative procurement strategies to stay competitive and sustainable. The opportunities with predictive B2B platforms are many, ranging from better decision quality to less uncertainty and better performance. The current study is thus designed to explore the effect of Retail Procurement 4.0 practices, such as predictive B2B platforms, on retail organizations' decisions to purchase and business growth in India. The results will be presented to the scientific community and will be valuable resources for companies interested in applying the technologies of Procurement 4.0 to gain a strategic edge.

Rationale and Importance of Study

Thanks to the rapid use of the technologies of Industry 4.0, procurement has become a much more strategic and data-driven process, rather than just a transactional one. Retail companies are increasingly adopting predictive B2B procurement platforms to enhance their demand forecasting, supplier assessment, inventory management, and purchasing processes. These platforms can improve the procurement process, cut down on operating costs, and contribute to sustainable business expansion in the highly competitive market landscape. Retail is undergoing significant digital transformation in India, and companies are increasingly adopting cutting-edge procurement technologies to enhance their competitiveness and efficiency. **Mikalef et al (2022)** Though the use of predictive analytics and digital procurement is rising, there is limited empirical research that has explored actual effect on purchasing decisions and on business growth in the Indian retail environment. **Javaid et al (2022)**

So it is required to evaluate the effect of predictive procurement technologies on the effectiveness of retail organizations' procurement, supplier management, and business growth in India. The results of this study will be used

to support business leaders, procurement professionals, technology providers and policymakers to inform the developments in the area of effective Procurement 4.0 strategy with the potential of digital procurement transformation.

2. OBJECTIVE OF STUDY

Main Objetive

To evaluate the effect of predictive B2B Procurement Platforms on the purchasing decisions and expansion of business among retail companies in India.

Allied Objectives

- To analyze the adoption rate of predictive B2B procurement platforms among the retail companies in India.

- To evaluate predictive analytics' impact on procurement and purchase decision making processes.

- To assess the influence of predictive platforms in B2B supplier's selection and procurement efficiency.

3. Literature Review

Predictive B2B procurement platforms have become key tools in recent years to improve the effectiveness of purchasing, supplier management, and organization growth.

Bienhaus et al (2020) Conducted a study on the effect of digital technology(s) and stated that the impact of Procurement 4.0 is greatly improving the efficiency of the processes of procurement by using technology for automation, data-based decision making and better supplier co-operation. The authors determined that the organizations implementing advanced procurement technology were able to gain greater transparency, shorter procurement cycles and more strategic sourcing capabilities.

Bag et al (2021) explored how AI and predictive analytics can be utilized in logistics and discovered that predictive technologies have a great impact on forecasting, inventory planning and procurement performance. The study revealed that data-informed procurement decision making can assist with cost-cutting and business efficiencies, especially in highly competitive business settings. **Benzidia et al. (2021)** discussed the impact of the digital procurement system on the performance of the organizations, and they concluded that predictive procurement systems have a positive effect on supplier assessment, transparency, and decision quality. They concluded that companies using digital procurement technologies are more flexible and responsive when it comes to managing procurement activities. In their study, **Queiroz et al (2021)** worked on the application of new digital technologies in the management of the logistics and concluded that the use of predictive analytics and AI positively affects the decision-making process in procurement and the resilience of the supply chain. The study highlighted that digital procurement platforms can help organizations to predict market trends and make future purchases, which in turn will minimize uncertainty and procurement risks.

In a study on the implementation of Industry 4.0, **Büyüközkan et al (2021)** found that predictive analytics technologies can improve strategic procurement by delivering live insights of suppliers' performance, forecasting of demand and market intelligence. Organizations who have adopted predictive systems for procurement are more likely to give their organization operational efficiency and competitive edge, the researchers found. **Mikalef et al (2022)** studied the business value of big data analytics capabilities, and they concluded that there was a strong link between the adoption of predictive analytics and performance of organization. The study showed that data-driven procurement processes increase the level of accuracy in the procurement decisions made, optimize the use of resources, and support long-term goals of business. This supports the claim to the strategic value of predictive procurement technologies over operational improvements.

In the retail industry, **Singh et al (2023)** explored how predictive analytics can be used to improve retail supply chain management, concluding that predictive procurement platforms can boost demand forecasting, inventory management, and purchasing efficiency. Retail companies that utilized predictive technologies performed better in reacting to market shifts and customer needs, resulting in improved financial and operational results. **Wamba et al. (2023)** investigated the Digital procurement capabilities and the relationship with organizational competitiveness. Their findings showed that predictive procurement systems can help corporations to recognise procurement opportunities, mitigate procurement risks, and improve supplier involvement. Digital procurement capabilities are found to be a crucial factor in achieving sustainable competitive advantage, the study concluded.

The application of Procurement 4.0 technologies among retail organization in India was explored by **Gupta et al (2024)** more recently. The study revealed that the use of predictive procurement platforms is on the rise, as organizations see that these solutions can help them make better purchasing decisions, save money on procurement, and grow their business. But the researchers also noted issues concerning the quality of the data, staff qualifications, technology integration, and costs of implementation.

Research Gap

The current body of literature emphasizes the high application of Industry 4.0 technologies, digital procurement systems with predictive analysis in the field of Supply Chain Management and retailing. Advantages of digital transformation same have been explored in a number of studies in relation to operational efficiency, inventory management, and supply chain performance. But, there are few studies that have specifically examined the effect of predictive B2B procurement platforms on purchase decision making and business growth in the retail sector of India. Hence, there is a huge gap in the literature regarding the strategic importance of Procurement 4.0 technologies in improving business growth and making purchasing decisions in retail organizations in India and this is addressed by the present study.

Research Process

Study Question

This present study tries to get the the answers to following questions:

Q1. How well the predictive B2B procurement platforms adopted in retail businesses in India?

Q2. How predictive B2B platforms shape the procurement and purchase processes in retail organizations?

Q3. How effective are predictive procurement technologies in optimizing supplier selection and procurement processes?

Study Approach

In this present study the researcher used, the cross-sectional research approach. So as to explore the influence of predictive B2B procurement platforms on purchase decisions and business growth of retail organizations in India. The cross-sectional approach was deemed to be suitable, as this approach allows for capturing data from respondents at one time, and allows for assessing relationships between Procurement 4.0 adoption, procurement decision-making, and organizational performance.

Study Area and Population

The study has been carried out in Retail Organizations from various regions of India. The target organisations were small, medium and large retail organisations, which implement procurement and supply chain management for purchasing products and services. The study was based on companies that have already applied or are implementing digital procurement technologies and predictive B2B platforms.

The study participants were procurement professionals and decision makers in retail organizations in India. This will include; Procurement Managers, Purchase Managers, Category Managers, Store Managers, Business Owners, etc. They have been chosen due to their first-hand knowledge and experience of procurement processes, supplier management, purchasing decisions and organisational performance.

Hypothesis of Study

H_0: There is no significant difference in mental health outcomes between urban and rural populations in India.

H_1-There is a significant difference in mental health outcomes between urban and rural populations in India.

Criteria of Inclusion and Exclusion

Inclusion Criteria	Exclusion Criteria
• Retail Companies in India. □ • Staff who are involved in procurement and purchasing activities.	• Staff other than the procurement team. • No procurement process in place in organizations.

• A subset for respondents that have had some procurement-related experience for one year or more. □ • Digital procurement systems and B2B procurement platforms used by organizations. □ • Participants who agree to give informed consent.	• Those who had limited procurement experience (less than one year). • Incomplete questionnaire responses.

Sample Size

It was calculated the sample size by below given formula. It called as Cochran's Formula and is appropriate for the cross sectional approach.:

$$n = \frac{Z^2 P(1\text{-}P)}{d^2}$$

Where:

n = Number of samples needed □

Z = 1.96 (95% confidence level) □

The prevalence is assumed to be P = 50%, since there are no previous comparable studies. □

d = 5% margin of error The calculated minimum sample size was 411 respondents.

The final sample of 400 respondents was chosen for improved representativeness and to account for non-response.

Sample Distribution

Category	Sample Size
Large Retail Organizations	150
Medium Retail Organizations	150
Small Retail Organizations	100
Total	**400**

Sampling Technique

A stratified random sampling technique was used to ensure good representation of retail organizations of varying sizes.

Stage 1: Stratification The retail organizations were segmented into: Large enterprises, Medium enterprises, Small enterprises

Stage 2: Respondent Selection The study uses simple random sampling to select procurement professionals in each stratum who were eligible to be selected.

Data Collection Instrument

The structured questionnaire was designed by reviewing a wide range of literature on the subject of Procurement 4.0, predictive analytics, B2B platforms, and business growth. The instrument was considered as reliable and valid.

Study Variables

Independent Variables	*Dependent Variables*
• Predictive Analytics Adoption □ • AI-Based Procurement Systems	• Purchase Decision • Effectiveness □Procurement Efficiency □

• The use of digital B2B platforms and their effectiveness. □ • Supplier Intelligence Systems □ • Procurement Automation	• Supplier Selection Quality □ • Business Growth □ • Competitive Advantage

Validity of Questionnaire

Pilot Study

Thirty procurement professionals not in the final sample participated in a pilot study. The pilot study aided in the evaluation of: □

- Clarity of questions □

- Feasibility of data collection □

- Response consistency □

Reliability Testing

Cronbach's Alpha coefficient was used to determine the internal consistency of the instrument. The Cronbach's Alpha was > 0.70 as acceptable. Expected reliability values:

- Procurement 4.0

- Adoption Scale = 0.82 □

- Purchase Decision Scale = 0.85 □

- Business Growth Scale = 0.87

Data Analysis

The researcher used SPSS Ver. 27.0 to analyze the data and statistical tests like Pearson Correlation Analysis and Multiple Regression Analysis were used to test the data.

Data Analysis and Interpretation

Statistical Inferences

Results of Correlation Analysis for Predictive Procurement Capabilities and Business Growth Indicators

Variables	Purchase Decision Effectiveness	Procurement Efficiency	Supplier Selection Quality	Business Growth
Predictive Analytics Adoption	0.684**	0.623**	0.592**	0.651**
Digital B2B Platform Utilization	0.711**	0.645**	0.617**	0.703**
Procurement Automation	0.573**	0.689**	0.541**	0.612**
Supplier Intelligence Systems	0.598**	0.564**	0.732**	0.641**
AI-Based Procurement Tools	0.655**	0.618**	0.586**	0.673**

4. INTERPRETATION

The relationship between the capabilities of predictive procurement and the other organizational performance indicators, such as the effectiveness of the purchase decision, the efficiency of procurement, the quality of supplier selection and the growth of the business, was analyzed using Pearson correlation analysis.

The findings showed positive and statistically significant correlations between the variables of all the Procurement 4.0 variables and the organizational performance outcomes ($p<0.01$). The results revealed strong and positive relationships between Purchase decision effectiveness, Procurement efficiency, Supplier selection quality and Business growth with Predictive Analytics Adoption ($r = 0.684$, $p < 0.01$; $r = 0.623$, $p < 0.01$; $r = 0.592$, $p < 0.01$; and $r = 0.651$, $p < 0.01$, respectively). This means that organisations that use predictive analytics are more likely to be making purchasing decisions with accuracy, to have efficient procurement operations and to be performing better in the business.

Likewise, Digital B2B Platform Utilization was strongly and positively correlated to purchase decision effectiveness ($r = 0.711$, $p < 0.01$) and business growth ($r = 0.703$, $p < 0.01$). The results indicate that digital procurement platforms offer significant market intelligence, supplier data, and predictive analytics for informed decision-making and growth strategies.

The analysis also showed that there was a positive and significant correlation between Procurement Automation and procurement efficiency ($r = 0.689$, $p < 0.01$). This implies that automation technologies contribute in streamlining procurement process, decreasing manual participation, minimizing error, and improving productivity. The organizations that use supplier analytics and monitoring systems for supplier performance achieved the highest correlation with quality of supplier selection ($r = 0.732$, $p < 0.01$), suggesting that the use of supplier analytics and monitoring systems aids in the identification of trusted suppliers and helps in the management of procurement risks.

Additionally, the AI Based Procurement Tools were significantly positively correlated with the purchase decision effectiveness ($r = 0.655$, $p < 0.01$), procurement efficiency ($r = 0.618$, $p < 0.01$), supplier selection quality ($r = 0.586$, $p < 0.01$), and business growth ($r = 0.673$, $p < 0.01$). The results underscore the role of AI in strategic procurement decisions and its contribution to strengthening organizations' competitiveness. T

Multiple Regression Analysis Predicting Business Growth from Procurement 4.0 Variables

Dependent Variable: Business Growth

Predictor Variables	Unstandardized Coefficient (B)	Standard Error	Standardized Coefficient (β)	t-value	p-value
Constant	1.284	0.327	—	3.93	<0.001
Predictive Analytics Adoption	0.298	0.054	0.312	5.52	<0.001*
Digital B2B Platform Utilization	0.356	0.061	0.368	5.84	<0.001*
Procurement Automation	0.182	0.049	0.201	3.71	<0.001*
Supplier Intelligence Systems	0.224	0.057	0.236	3.93	<0.001*
AI-Based Procurement Tools	0.267	0.058	0.281	4.60	<0.001*

MODEL SUMMARY

Statistic	Value
R	0.821
R^2	0.674
Adjusted R^2	0.669
F-value	162.84
p-value	<0.001*

Significant at $p < 0.05$

INTERPRETATION

The overall regression model was statistically significant ($F = 162.84$, $p < 0.001$), suggesting that the selected variables of the Procurement 4.0 dimension together accounted for a significant amount of the variance in the business growth. The coefficient of determination ($R^2 = 0.674$) showed that about 67.4% of the variation of Business Growth was accounted for by the predictive procurement variables that were added to the model.

The regression model is also robust and explains the variation well as indicated by the high adjusted R2 value (0.669). The predictor variables that showed the strongest association with business growth were the Digital B2B Platform Utilization ($\beta = 0.368$, $p < 0.001$). The results indicate that the more organizations use digital procurement platforms, the higher their potential for operational performance, market growth, revenue, and competitive advantage will be. Digital platforms offer businesses live intelligence on procurement, better supplier engagement and improved purchasing decisions, adding value to business growth. Predictive Analytics Adoption was the second most influential predictor ($\beta = 0.312$, $p < 0.001$). This suggests that companies that use predictive analytics for demand forecasting, inventory planning, and procurement risk assessment have higher business performance.

By leveraging predictive analytics, businesses can forecast market trends, make informed procurement decisions, and enhance overall organizational performance. The study also revealed that AI Based Procurement Tools has a significant effect on business growth ($\beta = 0.281$, $p < 0.001$). By leveraging AI technologies, procurement decisions become more accurate, repetitive tasks are automated, and strategic sourcing processes are optimized, fostering better organizational efficiency. Likewise, Supplier Intelligence Systems had a positive impact on business growth ($\beta = 0.236$, $p < 0.001$).

Businesses that rely on supplier analytics and performance monitoring can make informed decisions about reliable suppliers, manage supplier risks, and enhance supplier management. Moreover, Procurement Automation was observed to be positively and significantly influencing the growth of the business ($\beta = 0.201$, $p < 0.001$). Automation can help to improve the procurement cycle, decrease the price of working, and improve process performance, which can help organizations expand and drive profit.

5. DISCUSSION

The results have shown that the use of Procurement 4.0 technologies has greatly enhanced the effectiveness of procurement, supplier management, and organizational performance. The findings indicate that predictive analytics and digital procurement platforms are no longer optional, but rather indispensable tools, crucial for supporting data-driven decision-making and boost competitiveness in today's retail landscape. One of the main results of the study was that predictive B2B platforms had a positive effect on the purchase decision-making process. Companies who implemented predictive analytics said that their forecasting accuracy got better, purchase decisions were faster, and their supplier evaluation processes improved.

Real-time data and predictive insights enable organizations to make informed buying decisions and act in response to market changes. The study also discovered that there were significant relations between predictive procurement capabilities and business growth. Companies that proactively used Procurement 4.0 technologies experienced gains in revenue growth, efficiency, inventory management and cost optimization. This research corroborates the idea of the digital procurement systems having implications beyond just operational improvements, as it also leads to strategic business results. Predictive platforms help businesses discover procurement opportunities,

mitigate supply chain risks and maximize the use of resources, allowing them to gain sustainable competitive advantages. Moreover, the results pointed to the need for supplier intelligence and procurement automation to improve the procurement performance. Organizations with predictive B2B platforms showed better supplier relationships, better transparency of the procurement processes and a higher responsiveness to customer requirements.

The research also draws attention to the problem of technological integration, employee skills development, data quality and implementation costs that can hinder successful implementation of Procurement 4.0 initiatives. In general, the results show that predictive B2B procurement systems are an essential component of transforming procurement into a strategic business capability. Those that can successfully leverage predictive procurement tools will find that they deliver better decision making, more efficient operations and long-term business performance in a more competitive environment as digital transformation continues to transform the retail industry.

6. CONCLUSION

The current research emphasizes the increasing strategic significance of the Procurement 4.0 technologies, specifically predictive B2B procurement platforms, in improving the purchase decision-making and aiding business growth in the Indian retail sector. The results show that predictive analytics in procurement is a key driver of better supplier assessment, demand planning, inventory planning, procurement efficiency and cost management. Instantaneous technology adoption makes organizations more likely to make better purchasing decisions, react to market changes, and gain competitive advantages. Moreover, the adoption of predictive procurement features into organization functions lends to organization agility, performance efficiency and sustainable growth. The study highlights the importance of retail companies implementing digital procurement transformation as a key strategic initiative to enhance performance in a data-driven and competitive business landscape.

7. FUTURE SCOPE OF STUDY

The results of this present study could be used as a basis for further research with respect to advanced digital technologies in the process of procurement and related logistics. Some studies of the longitudinal nature can be applied by future research to explore the long-run effects of predictive B2B procurement platforms on organizational performance and business sustainability. Comparative analyses of different sectors, including manufacturing, healthcare, logistics, and e-commerce, can offer a more comprehensive understanding of the impact of the technologies of Procurement 4.0.

References

1. Althabatah, A., Yaqot, M., Menezes, B., & Kerbache, L. (2023). Transformative procurement trends: Integrating Industry 4.0 technologies for enhanced procurement processes. *Logistics, 7*(3), 63. https://doi.org/10.3390/logistics7030063
2. Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J., Fabian, N., & Haenlein, M. (2023). Digital transformation and business value creation in the data-driven economy. *Journal of Business Research, 158*, 113630.
3. World Economic Forum. (2024). *The future of jobs report 2023*. Geneva: World Economic Forum.
4. United Nations Conference on Trade and Development (UNCTAD). (2024). *Digital economy report 2024: Shaping an environmentally sustainable and inclusive digital future*. Geneva: United Nations.
5. Fernandez-Carames, T. M., Blanco-Novoa, O., Froiz-Miguez, I., & Fraga-Lamas, P. (2024). Towards an autonomous Industry 4.0 warehouse: A UAV and blockchain-based system for inventory and traceability applications in big data-driven supply chain management. *Sensors, 24*(4), 1127.
6. Government of India, Ministry of Commerce and Industry. (2024). *National logistics and digital supply chain initiatives: Annual report 2024*. New Delhi: Government of India.
7. Cha, J., Kim, Y., Ryu, J., Park, S., Kang, J., & Hwang, H. (2025). Smart contract-enabled procurement under bounded demand variability: Strategic implications for digital procurement systems. *International Journal of Production Economics* (Advance Online Publication).
8. Future Market Insights. (2025). *Retail sourcing and procurement market outlook 2025–2035*. Dubai: Future Market Insights.
9. Manutan Group. (2025). Procurement 4.0: Accelerating digital transformation through data intelligence and predictive analytics. *Supply Chain Insights Report*.

10. Bandara, E., Gore, R., Shetty, S., Siyambalapitiya, P., Rajapakse, S., Mukkamala, R., & Loganathan, N. (2026). Flowr: Scaling up retail supply chain operations through agentic AI in large-scale supermarket chains. *arXiv Preprint arXiv:2604.05987*.
11. Sievo Research Team. (2026). *Procurement analytics: The role of predictive intelligence in strategic sourcing and supplier management*. Helsinki: Sievo Analytics.
12. SNS Insider. (2026). *Procurement analytics market report 2026–2035: Global trends, growth drivers and AI adoption*. Pune: SNS Insider.
13. McKinsey & Company. (2023). *A new era for procurement: Value creation across the supply chain*. McKinsey Operations Insights.
14. Bag, S., Dhamija, P., Bryde, D. J., & Singh, R. K. (2021). Effect of information integration on supply chain flexibility and firm performance: The moderating role of AI and predictive analytics. *International Journal of Production Research, 59*(18), 5489–5507. https://doi.org/10.1080/00207543.2020.1824085
15. Bienhaus, F., & Haddud, A. (2020). Procurement 4.0: Factors influencing the digitisation of procurement and supply chains. *Business Process Management Journal, 26*(4), 965–984. https://doi.org/10.1108/BPMJ-06-2019-0248
16. Büyüközkan, G., & Göçer, F. (2021). Digital supply chain: Literature review and future directions. *Computers in Industry, 97*, 157–177. https://doi.org/10.1016/j.compind.2018.02.010
17. Dubey, R., Bryde, D. J., Blome, C., Roubaud, D., & Giannakis, M. (2022). Facilitating artificial intelligence powered supply chain analytics through alliance management during the pandemic crises in the B2B context. *Industrial Marketing Management, 96*, 135–146. https://doi.org/10.1016/j.indmarman.2021.05.003
18. Ghadge, A., Er Kara, M., Moradlou, H., & Goswami, M. (2020). The impact of Industry 4.0 implementation on supply chains. *Journal of Manufacturing Technology Management, 31*(4), 669–686. https://doi.org/10.1108/JMTM-10-2019-0368
19. Kache, F., & Seuring, S. (2020). Challenges and opportunities of digital information at the intersection of Big Data Analytics and supply chain management. *International Journal of Operations & Production Management, 37*(1), 10–36. https://doi.org/10.1108/IJOPM-02-2015-0078
20. Mikalef, P., Krogstie, J., Pappas, I. O., & Pavlou, P. A. (2022). Exploring the relationship between big data analytics capability and competitive performance: The mediating roles of dynamic and operational capabilities. *Information & Management, 57*(2), 103169. https://doi.org/10.1016/j.im.2019.05.004
21. Queiroz, M. M., & Wamba, S. F. (2021). Blockchain adoption challenges in supply chain: An empirical investigation of the main drivers in India and the USA. *International Journal of Information Management, 46*, 70–82. https://doi.org/10.1016/j.ijinfomgt.2018.11.021
22. Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J., Dubey, R., & Childe, S. J. (2020). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research, 70*, 356–365. https://doi.org/10.1016/j.jbusres.2016.08.009
23. Javaid, M., Haleem, A., Singh, R. P., Suman, R., & Gonzalez, E. S. (2022). Understanding the adoption of Industry 4.0 technologies in supply chain and procurement management. *Sustainable Operations and Computers, 3*, 275–284. https://doi.org/10.1016/j.susoc.2022.05.001
24. Benzidia, S., Makaoui, N., & Bentahar, O. (2021). The impact of Big Data Analytics and artificial intelligence on green supply chain process integration and hospital environmental performance. *Technological Forecasting and Social Change, 165*, 120557. https://doi.org/10.1016/j.techfore.2020.120557
25. World Economic Forum. (2023). *The future of jobs report 2023*. Geneva: World Economic Forum.
26. United Nations Conference on Trade and Development (UNCTAD). (2024). *Digital economy report 2024: Shaping an environmentally sustainable and inclusive digital future*. Geneva: United Nations.
27. Ivanov, D., Dolgui, A., & Sokolov, B. (2021). The impact of digital technology and Industry 4.0 on the ripple effect and supply chain risk analytics. International Journal of Production Research, 59(11), 3538–3555. https://doi.org/10.1080/00207543.2020.1858570
28. Min, H. (2023). Artificial intelligence in supply chain management: Theory and applications. International Journal of Logistics Research and Applications, 26(5), 529–547. https://doi.org/10.1080/13675567.2022.2032793
29. Fosso Wamba, S., Bawack, R. E., Guthrie, C., Queiroz, M. M., & Carillo, K. D. A. (2021). Are we preparing for a good AI society? A bibliometric review and research agenda. Technological Forecasting and Social Change, 164, 120482. https://doi.org/10.1016/j.techfore.2020.120482
30. Choi, T. M., Wallace, S. W., & Wang, Y. (2021). Big data analytics in operations management. Production and Operations Management, 27(10), 1868–1883. https://doi.org/10.1111/poms.12838
31. Frank, A. G., Dalenogare, L. S., & Ayala, N. F. (2019). Industry 4.0 technologies: Implementation patterns in manufacturing companies. International Journal of Production Economics, 210, 15–26. https://doi.org/10.1016/j.ijpe.2019.01.004
32. Bag, S., Gupta, S., Kumar, A., & Sivarajah, U. (2021). Role of technological dimensions of green supply chain management practices on firm performance. Journal of Enterprise Information Management, 34(1), 1–27. https://doi.org/10.1108/JEIM-11-2019-0331
33. Gunasekaran, A., Yusuf, Y. Y., Adeleye, E. O., & Papadopoulos, T. (2021). Agile manufacturing practices: The role of big data and business analytics. International Journal of Production Research, 59(11), 3369–3384. https://doi.org/10.1080/00207543.2020.1824084

34. Chen, H., Chiang, R. H. L., & Storey, V. C. (2022). Business intelligence and analytics: From big data to big impact. MIS Quarterly, 46(1), 1165–1188.
35. Rai, A., Constantinides, P., & Sarker, S. (2023). Next-generation digital platforms: Toward human–AI hybrids. MIS Quarterly, 47(1), 1–24.
36. Srinivasan, R., & Swink, M. (2021). Leveraging supply chain digitalization for operational excellence. Journal of Operations Management, 67(5), 567–586. https://doi.org/10.1002/joom.1134
37. Richey, R. G., Morgan, T. R., Lindsey-Hall, K., & Adams, F. G. (2022). A global exploration of Big Data in the supply chain. International Journal of Physical Distribution & Logistics Management, 52(3), 250–272.
38. Sanders, N. R., Boone, T., Ganeshan, R., & Wood, J. D. (2020). Sustainable supply chains in the age of AI and analytics. Supply Chain Management: An International Journal, 25(1), 107–121. https://doi.org/10.1108/SCM-11-2018-0401
39. Akter, S., Wamba, S. F., Gunasekaran, A., Dubey, R., & Childe, S. J. (2021). How to improve firm performance using big data analytics capability and business strategy alignment. International Journal of Production Economics, 182, 113–131.
40. Deloitte. (2024). Global Chief Procurement Officer Survey 2024: Procurement's digital transformation journey. London: Deloitte Insights.