

Leveraging Predictive Analytics for Strategic Risk Management in Global Supply Chains

Saeem Mali^{1,*}, Vedant Patil²

¹Brihan Maharashtra College of Commerce, Pune, India

²Amity International Business School, Amity University, Noida, India

Email address:

saeemali0248@gmail.com (Saeem Mali), vedantpatil0706@gmail.com (Vedant Patil)

*Corresponding author

Abstract

In an increasingly interconnected and volatile global market, the strategic management of risks within supply chains is paramount. This paper explores the application of predictive analytics to enhance risk management strategies across global supply networks. The study begins by contextualizing the complexities and uncertainties inherent in modern supply chains, including geopolitical risks, natural disasters, and fluctuating demand patterns. The objective is to design a predictive model that utilizes large datasets from diverse sources to forecast potential disruptions and enable proactive risk mitigation. The methodology encompasses data collection, advanced statistical analysis, and machine learning techniques to identify risk patterns and predict their impact on supply chain operations. Results reveal that predictive analytics can significantly improve the accuracy of risk forecasts, allowing companies to develop more resilient and adaptive supply chain strategies. The conclusion underscores the critical role of predictive analytics in transforming risk management practices, advocating for its integration as a core component of strategic supply chain management.

Keywords

Predictive Analytics, Risk Management, Global Supply Chains, Strategic Management, Supply Chain Resilience, Machine Learning, Risk Forecasting, Data-Driven Decision Making