Abstract

This research investigates the relationship between data analytics and operational efficiency in supply chain management (SCM). In an increasingly globalized and competitive marketplace, organizations are turning to data analytics to optimize their supply chains, improve decision-making, and reduce costs. By analyzing vast amounts of data, businesses can gain insights into inventory management, demand forecasting, logistics, and supplier performance, ultimately enhancing their operational efficiency. This study aims to explore how data analytics is applied in SCM and its impact on key operational metrics such as lead time, cost reduction, and service levels.

A mixed-methods approach is utilized, combining quantitative data analysis with qualitative interviews. The quantitative phase involves analyzing survey responses from supply chain managers to assess the use of data analytics tools in SCM and their effect on operational performance. Statistical techniques are employed to determine correlations between analytics adoption and efficiency improvements. The qualitative phase includes interviews with industry experts to gain deeper insights into the practical applications of data analytics, the challenges faced, and the perceived benefits of using these tools in day-to-day supply chain operations.

The findings from this research provide valuable evidence of how data analytics contributes to operational efficiency in supply chain management. By integrating both empirical data and expert perspectives, the study offers recommendations for organizations looking to leverage analytics to optimize their supply chain processes, enhance performance, and maintain a competitive edge.