

# AI-Enabled Global Supply Chain: An Integrative Model of Market Forecasting and Data Privacy as Dynamic and Institutional Capabilities

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## Abstract:

**Research Aim:** This research is to investigate how the link between Market Forecasting (MF) and global Supply Chain Optimization (GSCO) is influenced by the moderating impacts of Data Privacy Regulations (DPRs) and the mediating role of Artificial Intelligence (AI). In light of the evolving data privacy rules and the expanding significance of AI in Pakistan's logistics sector, this study outlines critical elements that can Propel the optimization of global supply chain operations.

**Research Design/Methodology:** The data used in this investigation came from 211 Pakistani logistics companies managers and employees and was gathered using a straightforward random sampling technique. Standard statistical frameworks were employed for analysis, and several regression methods were used to examine moderating and mediating influences. This aids in comprehending the significance of data privacy laws and AI in market forecasting.

**Findings:** The research's results demonstrate how AI enhances market forecasting, which significantly boosts the effectiveness of global supply chain management. It additionally became evident, though, that data privacy regulations have a significant influence on how well AI is used, which can both increase and restrict the open exchange of information and boost customer confidence.

**Originality/Value:** This study offers fresh perspectives on the AI to supply chain optimization and market forecasting, especially in Pakistan, where data privacy laws are becoming increasingly significant. The paper offers recommendations regarding how to employ AI techniques in a way that complies with data privacy laws for practitioners and policymakers.

## Keywords:

Artificial Intelligence, Data Privacy, Market Forecasting, Global Supply Chain, Pakistan.