

OPTIMIZING SUPPLY CHAIN RESILIENCE STRATEGIES TO FACE NATURAL DISASTERS: LESSONS FROM JAPANESE COMPANIES FACING SEISMIC DISRUPTIONS

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Abstract

This study explores the optimization of supply chain resilience (SCR) strategies in Japanese companies, focusing on the context of seismic disruptions. Utilizing a mixed-methods approach, the research integrates qualitative insights from bibliometric and thematic analyses with quantitative data obtained from structured surveys. The qualitative analysis reveals critical themes such as visibility, technological investment, supplier diversification, and business continuity planning, which are essential for enhancing SCR. The quantitative analysis, supported by regression models and gradient boosting techniques, identifies significant predictors of resilience and performance metrics such as visibility, time to recovery, and return on investment. The findings highlight the importance of integrated technological solutions, strategic leadership, and adaptive strategies in building resilient supply chains capable of withstanding natural disasters. The study underscores the need for ongoing empirical research to bridge gaps in the practical application of resilience strategies and suggests directions for future research. The implications for supply chain management include the necessity for comprehensive resilience planning, balanced inventory management, and enhanced communication practices to ensure continuity and sustainability in the face of increasing global disruptions.