8th International Conference on BUSINESS Management and Finance

ICBMF
27 - 29 March 2025
Oxford, UK

# Enhancing Inbound Logistics Metrics and Performance for Greater Efficiency at Gunma Trading Co. Ltd. in Incheon, South Korea

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## Abstract

Since its establishment in 2018, Gunma Trading Co. Ltd has distinguished itself as a pioneer in tackling the weaknesses within South Korea's clearing, forwarding, and logistics industry. In a significant initiative, the company undertook a comprehensive study to evaluate inbound logistics metrics and their consequential impact on the performance of freight forwarders within the Gunma Network, specifically in Incheon, South Korea. The research was guided by three primary objectives: evaluating the accuracy of order fulfillment among participating freight forwarders, measuring the on-time delivery rates of shipments, and analyzing the safety of goods handled by these entities.

The study was a collaborative effort, involving both researchers and stakeholders from the freight forwarding industry within the Gunma Network. A descriptive research design was meticulously applied, integrating qualitative and quantitative methodologies to gather extensive data through structured interviews and surveys. A total of 160 participants were strategically selected from a target population of 246, which included employees from partner companies, clearing agents, and importing firms affiliated with Gunma in Incheon. Simple random and census sampling techniques were utilized using the Krejcie and Morgan table to ensure a representative sample. The contributions of these participants were invaluable in enriching the research findings.

The analysis was conducted rigorously, employing descriptive statistics—such as percentages, means, and standard deviations—and inferential statistics, including Pearson correlation and multiple linear logistic regression analysis. The results were systematically presented through various figures, tables, and narrative descriptions, while qualitative insights were derived using thematic analysis. This research revealed that implementing inbound logistics metrics has significantly mitigated the incidence of damaged shipments among members of the Gunma Network. The regression analysis indicated an intercept of 13.803 with statistical significance ($p=0.000$). Furthermore, the coefficient for order accuracy stood at 0.100 ($p=0.003$), the on-time delivery rate exhibited an intercept of 0.043 ($p=0.002$), and the safety of goods was scored at 0.065, underscoring positive outcomes and the potential for further improvement in the logistics.

These further improvements in the logistics include inadequate performance measurement, absence of documented procedures and delays. The findings contribute valuable insights into the effects of inbound logistics metrics on freight forwarder performance.

**Keywords:** South Korea Transportation Industry, Inbound Logistics Metrics, Supply Chain Efficiency, Freight Forwarding, Incheon Logistics

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