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IMPACT OF LOGISTICS EFFICIENCY ON EXPORT PERFORMANCE

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Abstract:

Logistics efficiency has become a critical determinant of export success in today's globalized economy. Efficient logistics systems ensure timely delivery, cost reduction, improved coordination, and enhanced competitiveness in international markets.

This study examines how key logistics components such as transportation reliability, warehousing, customs clearance, inventory management, and supply chain integration impact the export performance of firms. Using a structured questionnaire and quantitative analysis based on responses from 100 participants at Marks Engineering Works, the research explores the relationship between logistics efficiency and export competitiveness.

Analytical tools such as percentage analysis, Chi-square tests, ANOVA, and regression analysis were employed to measure how logistics performance influences export outcomes. The findings reveal that transportation reliability, supply chain coordination, and logistics cost play significant roles in ensuring timely exports and meeting global customer expectations.

The study concludes that improved logistics efficiency leads to faster delivery cycles, increased export orders, and enhanced customer satisfaction, thereby strengthening overall export competitiveness.

Key Words: Logistics Efficiency, Export Performance, Supply Chain Management, Transportation Reliability, Warehousing, Inventory Control, Customs Clearance, Logistics Cost, Supply Chain Integration, Global Competitiveness, International Trade.

Introduction:

The rapid expansion of global trade has made logistics efficiency a cornerstone of export performance. In international business, a firm's ability to deliver products on time, at the right cost, and in good condition has become essential for maintaining competitiveness. Logistics involves managing the flow of goods, services, information, and resources from the point of production to the end customer.

Efficient logistics systems minimize delays, optimize transportation routes, reduce inventory costs, and ensure smoother coordination across the supply chain. With growing global customer expectations and intensifying competition, exporters face increasing pressure to enhance logistical performance. Efficient logistics not only reduces operational bottlenecks but also enables exporters to enter new markets, improve customer satisfaction, and achieve long-term growth.

In this context, logistics performance is not merely a support function it is a strategic factor that directly determines export success and global competitiveness.

Objectives of the Study:

- To examine the effect of logistics efficiency on the overall export performance of firms.
- To identify the key logistics components that influence export efficiency.
- To analyze the relationship between logistics cost and export competitiveness.
- To evaluate the role of supply chain integration and coordination in improving export performance.

Review of Literature:

Luttermann, S., Kotzab, H., & Halaszovich, T. (2020). The Impact of Logistics Performance on Exports, Imports, and Foreign Direct Investment - This study investigates the relationship between logistics performance and international trade flows, including exports, imports, and foreign direct investment (FDI). The authors utilized panel data analysis to examine how improvements in logistics infrastructure and services influence trade volumes and FDI across various countries. The findings suggest that enhanced logistics performance positively impacts trade efficiency and economic growth, emphasizing the strategic importance of logistics in global commerce.

Yangalo, T. (2024). The Impact of Logistics Performance on Trade Efficiency and Economic Growth

- Yangalo's research explores the complex relationship between logistics performance and economic growth, focusing on regional disparities and their impact on international trade volumes. The study covers regions such as East Asia, Europe, and Sub-Saharan Africa, analyzing data from the World Bank, including the Logistics Performance Index (LPI), GDP growth rates, and border compliance metrics. The results reveal significant regional disparities in logistics performance and economic growth, highlighting the need for targeted policy interventions to improve logistics efficiency and trade outcomes.

Zakia, M., Ben Ali, H., Derbal, S., & Aissa, S. (2024). The Impact of Logistics Performance on Export Market Penetration - This study examines the connection between logistics performance and export market penetration in ASEAN countries. The authors employ the Generalized Method of Moments (GMM) estimator to analyze dynamic panel data comprising annual observations on logistics performance indicators, export market penetration metrics, and macroeconomic variables such as inflation rates and intra-regional trade volumes. The findings indicate that improved logistics performance significantly enhances export market penetration, while factors such as inflation negatively affect export competitiveness.

Khulova, D. S. L. (2025). The Impact of Logistics Performance on Countries' Export Competitiveness. Proceedings of the Central European Conference on Business and Economics - Khulova's research investigates how logistics performance influences export competitiveness among countries. The study utilizes gravity models and Poisson pseudo-maximum likelihood estimators to analyze the impact of logistics performance on bilateral trade flows. The results suggest that higher logistics performance positively affects export growth. Additionally, increasing similarity in logistics performance between trading partners supports more intensive bilateral trade flows.

Ding, T., Zhu, W., & Zhao, M. (2023). Does Cross-Border Logistics Performance Contribute to Export Competitiveness? Evidence from China Based on the Iceberg Transport Cost Model. Sustainability - This study explores the relationship between logistics performance and export competitiveness using China's Logistics Performance Index (LPI) and the iceberg transport cost model. The findings indicate that improvements in logistics efficiency particularly in logistics service capacity and infrastructure quality significantly enhance export competitiveness by reducing transportation costs and increasing demand for domestic goods in international markets.

Chishty, S. K., & Al-Saadi, M. (2024). Managing Logistics Performance on Export and International Market Competitiveness: An Evaluation Using Firm Business Data. Journal of International Commerce, Economics and Policy - This study analyzes how logistics performance at the firm level influences export intensity and international market competitiveness. The research highlights the role of customs efficiency, infrastructure quality, and logistics adoption in enhancing export performance. It suggests that firms investing in logistics improvements achieve greater market penetration and sustained competitiveness.

Wang, W. (2024). The Impact of International Logistics Performance on Import and Export Trade: Evidence from the Belt and Road Initiative Countries. Nature Communications - This study examines the influence of international logistics performance on trade flows among Belt and Road Initiative countries. The findings indicate that improved logistics performance significantly enhances both import and export trade volumes by reducing transaction costs and improving trade facilitation mechanisms.

Research Methodology:

Research Approach:

A quantitative research approach was adopted using structured questionnaires. The collected data were analyzed using SPSS software to generate descriptive statistics (frequency and percentage) and inferential statistics (Chi-square test, ANOVA, and Regression Analysis).

Sampling Design:

- Population: Employees, logistics service providers, and professionals involved in export operations at Marks Engineering Works.
- Sample Size: 100 respondents.
- Sampling Method: The census method was used due to the easy accessibility of respondents within the organization's export and logistics sector.

Data Collection Method:

Data were collected through a structured questionnaire consisting of both close-ended and open-ended questions. The questionnaire covered:

- Demographic details
- Logistics cost
- Warehousing efficiency
- Transportation reliability
- Supply chain integration
- Export performance

Sources of Data:

Primary Data:

Collected directly from respondents through structured questionnaires.

Secondary Data:

Obtained from books, research journals, government reports, company websites, and online databases such as the World Bank Logistics Performance Index (LPI).

Tools for Analysis:

The collected data were analyzed using SPSS and Microsoft Excel. The following statistical tools were applied:

- Percentage Analysis - To analyze demographic characteristics of respondents.
- Chi-Square Test - To determine the relationship between logistics factors and export performance.
- ANOVA (Analysis of Variance) - To compare group differences in logistics efficiency.
- Regression Analysis - To assess the degree of influence of logistics performance on export outcomes.

Explanation of Statistical Tools:

Chi-Square Test:

The Chi-Square (x^2) test is a non-parametric statistical test used to examine whether there is a significant relationship between two categorical variables (e.g., gender, education level, opinion categories).

Outcome:

It compares observed frequencies in each category with expected frequencies to determine whether any differences are statistically significant.

ANOVA (Analysis of Variance):

ANOVA is a statistical test used to compare the means of three or more groups to determine whether at least one group mean is significantly different from the others.

Outcome:

It helps identify whether differences among group averages are statistically significant or merely due to random variation.

Regression Analysis:

Regression analysis is a statistical method used to study the relationship between one dependent variable and one or more independent variables.

Outcome:

It determines the magnitude and direction of the relationship, showing how much and in what way independent variables influence the dependent variable.

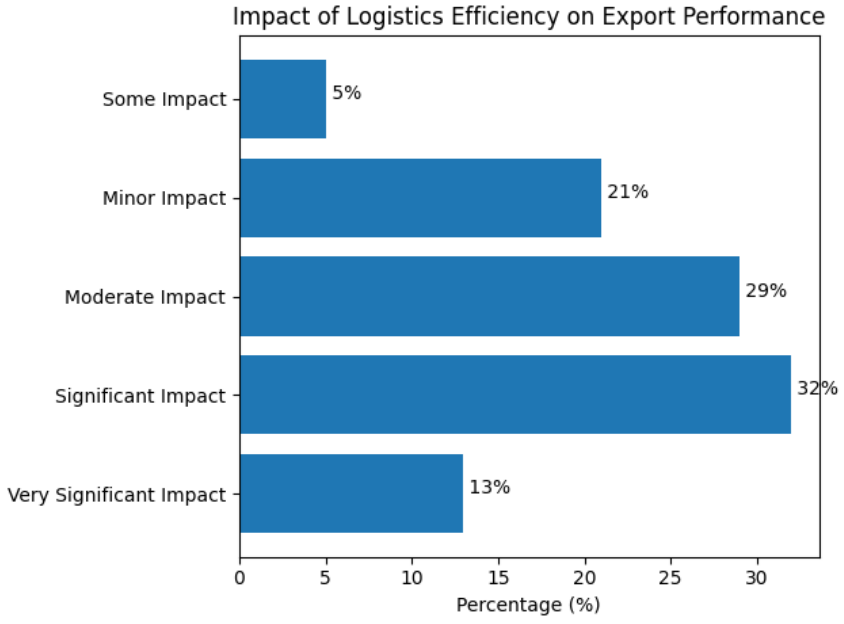
How would you rate the impact of logistics efficiency on your export performance?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Impact	5	5	5	5
	Minor Impact	21	21	21	26
	Moderate Impact	29	29	29	55
	Significant Impact	32	32	32	87
	Very Significant Impact	13	13	13	100
	Total	100	100	100	

Interpretation:

- The table shows that most respondents believe logistics efficiency has a strong impact on export performance.
- About 32% rated it as having a significant impact, and 13% said it has a very significant impact.
- Meanwhile, 29% felt it has a moderate impact, and only 21% saw it as a minor impact. A small number (5%) felt there is just some impact.

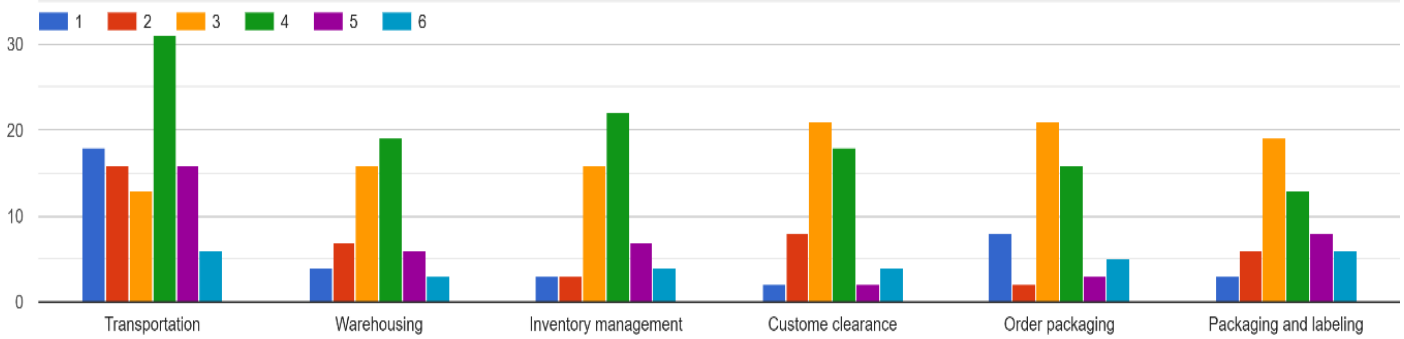
Chart showing the logistics efficiency impact on export performance:



Which of the following logistics components has the greatest impact on your export efficiency?

	Observed N	Expected N	Residual
1	18	16.7	1.3
2	16	16.7	-0.7
3	13	16.7	-3.7
4	31	16.7	14.3
5	16	16.7	-0.7
6	6	16.7	-10.7
Total	100		

Chart showing greatest impact on your export efficiency:



How would you describe your firm's overall logistics cost in relation to total export cost?

Model	Variables Entered	Variables Removed	Method
1		.	Enter

a. Dependent Variable: How would you describe your firms overall logistics cost in relation to total export cost? [Very Low]

b all request variables entered.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58.086	1	58.086	126.742	<.001
	Residual	44.914	98	.458		
	Total	103.000	99			

a. Dependent Variable: How would you describe your firm"s overall logistics cost in relation to total export cost? [Very Low]

b. Predictors: (Constant), How would you describe your firm"s overall logistics cost in relation to total export cost? [Low]

Coefficients[a]

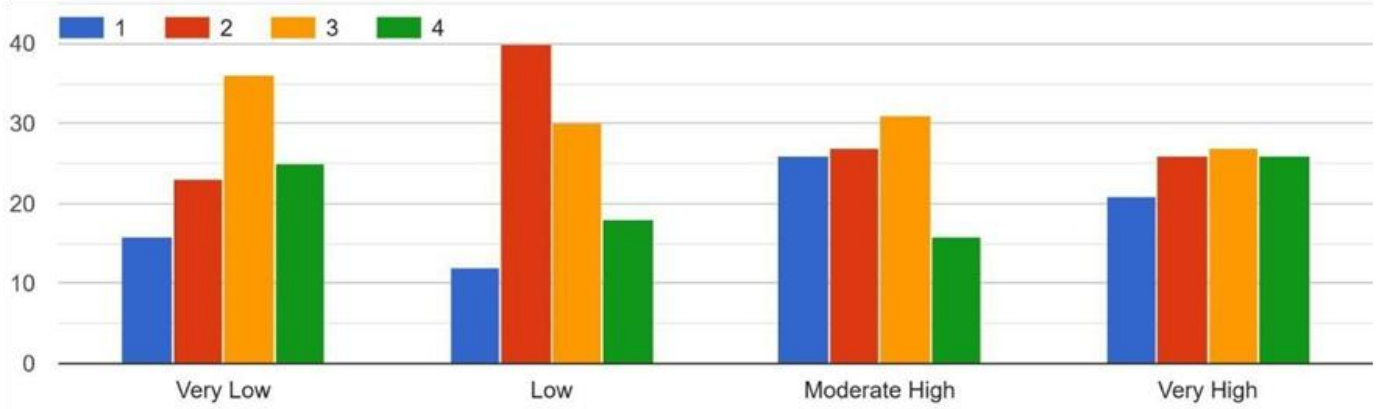
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.598	.199		3.013	.003
	How would you describe your firm"s overall logistics cost in relation to total export cost? [Low]	.827	.073	.751	11.258	<.001

a. Dependent Variable: How would you describe your firm"s overall logistics cost in relation to total export cost? [Very Low]

Interpretation:

The F-value (126.742) shows the strength of the regression model. The p-value (Sig.) < .001, which is less than 0.05, indicates that the model is statistically significant. This means there is a significant relationship between the independent variable ("logistics cost - low") and the dependent variable ("logistics cost - very low").

Chart showing firm's overall logistics cost in relation to total exports:



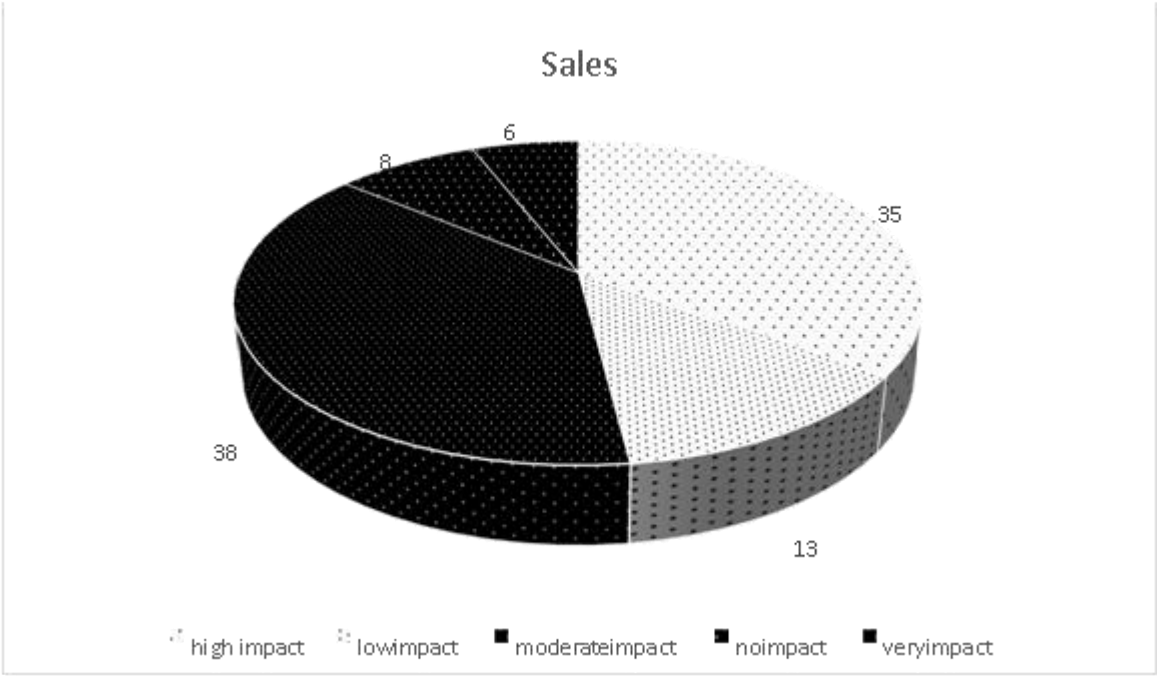
How would you rate the impact of supply chain integration on your firm's export performance?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High Impact	35	35	35	35
	Low Impact	13	13	13	48
	Moderate Impact	38	38	38	86
	No Impact	8	8	8	94
	Very High Impact	6	6	6	100
	Total	100	100	100	

Interpretation:

38% of respondents rated the impact as moderate. 35% said it has a high impact on export performance. 6% felt it has a very high impact, showing strong benefits for some firms. Only 13% reported a low impact, and 8% said there is no impact at all.

Chart showing impact of supply chain integration on firm's export performance:



Findings:

- Logistics efficiency has a strong and positive impact on export performance. Firms that maintain reliable transportation, faster order processing, and timely delivery experience higher customer satisfaction and increased international market reach. Efficient logistics also reduces delays, minimizes risks, and directly contributes to improved export volumes and profitability.
- The findings indicate that transportation, warehousing, inventory management, packaging, and documentation accuracy are the major components influencing export efficiency. Among these, transportation reliability was identified as the most critical factor. Efficient customs handling, digital

tracking, and well-organized storage operations also significantly enhance export workflow and reduce lead times.

- The study revealed a negative relationship between high logistics cost and export competitiveness. Firms with increased transportation charges, handling fees, and storage costs struggle to offer competitive pricing in international markets. Conversely, firms that optimize logistics expenses through route optimization, bulk shipping, or technological integration achieve better cost competitiveness and improve their ability to compete globally.
- Strong supply chain integration and coordination significantly improve export performance. Firms that share real-time information with suppliers and logistics partners experience reduced uncertainties, smoother operations, and faster responses to market changes. Collaborative planning, digital communication tools, and coordinated scheduling enhance efficiency, reduce bottlenecks, and improve the overall export cycle.

Implications:

- Enhance logistics infrastructure such as transport connectivity, ports, and warehouses to reduce export lead times.
- Implement cost-control measures in transportation and warehousing to maintain competitive export prices.
- Adopt digital logistics platforms for real-time tracking and coordination among supply chain partners.
- Strengthen customs operations through automation and faster clearance procedures to reduce export delays.
- Invest in training programs to improve employees' logistics management and export documentation skills.
- Encourage public-private partnerships to develop integrated logistics parks and multimodal transport systems.

Conclusion:

The study concludes that logistics efficiency is a major driver of export performance. Efficient operations reduce delays, improve customer satisfaction, and enhance competitiveness. High logistics cost remains a critical challenge; however, firms that adopt cost-saving measures and digital tools can strengthen their market position. Supply chain integration significantly improves coordination, forecasting, and operational consistency. Overall, logistics capabilities must be strengthened at both firm and policy levels to improve export efficiency and global competitiveness.

References:

1. Bugarcic, F. (2024). Estimating the Effects of Logistics Performance on Trade. GRZ Working Paper Series.
2. Bugarcic, F. (2024). Assessing the Effects of Logistics Performance on Export and Import Trade. International Journal of Logistics Management.
3. Cheng, W. S. (2021). Research on the Impact of Logistics Industry Efficiency and Its Influencing Factors.
4. Chishty, S. K., & Al-Saadi, M. (2024). Managing Logistics Performance on Export and International Market Competitiveness: An Evaluation Using Firm Business Data. Journal of International Commerce, Economics and Policy.
5. Chishty, S. K. (2025). Managing Logistics Performance on Export and International Market Competitiveness: An Evaluation Using Firm Business Data.
6. Chen, T., & Tomasi, S. (2024). An Empirical Analysis of the Impact of Logistics Performance on Export