

# ANALYSIS OF THE FACTORS AFFECTING TO LOGISTICS SERVICE QUALITY BASED ON UNACCOMPANIED PASSENGER BAGGAGE WAREHOUSES IN SRI LANKA

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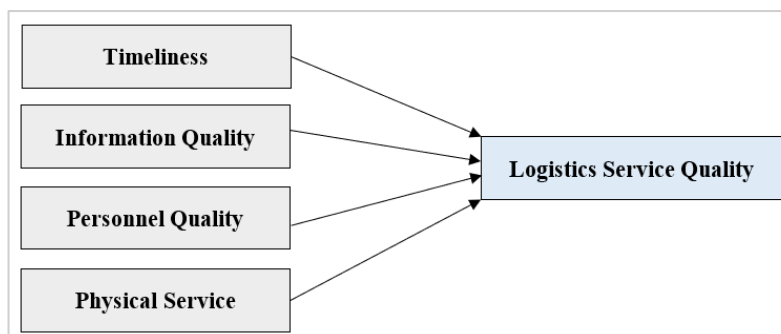
**ABSTRACT** – This study underscores Logistics Services’ essential role in cross-border trade, with warehousing as a key link in product flows. Its primary goal is identifying factors impacting Logistics Service Quality (LSQ) in UPB bonded warehouses in Sri Lanka. Additionally, it addresses challenges for UPB consignees and suggests LSQ improvement strategies. Using a deductive approach and quantitative research, the study employs online questionnaires for data collection from 390 customs bonded UPB consignees. LSQ dimensions align with warehouse performance, with Timeliness, Information Quality, Personnel Quality, and Physical Service identified as pivotal LSQ influencers. Descriptive and inferential analyses validate these factors’ positive effects on LSQ. The study delves into industry challenges, proposing strategies to enhance UPB operational efficiency. It emphasizes stakeholders’ role in embracing change, pursuing excellence, and achieving competitive advantage for sustainable growth.

**Keywords:** Unaccompanied Passenger Baggage (UPB); Logistics Service Quality (LSQ); UPB Bonded Warehouses; Sri Lanka Customs

## 1. INTRODUCTION

In Sri Lanka, temporary storage of dutiable personal goods under UPB (Unaccompanied Baggage) bond, with deferred duty payments, faces challenges. Delays in CusDecs processing for sea and air freight, congested container clearance, and inefficiencies in handling Less than Container Load (LCL) cargo contribute to bottlenecks [1]. Gaps between customer expectations and services result from communication issues, time-consuming processes, deficient personnel quality [3], and inadequate physical facilities for consignees [4]. This study aims to identify factors impacting Logistics Service Quality (LSQ) in UPB bonded warehouses in Sri Lanka. It addresses the primary objective by pinpointing LSQ-affecting factors, while secondary objectives involve recognizing current consignee challenges and suggesting recommendations to enhance LSQ in the UPB industry. Focused on UPB bonded warehouses in the Western Province, the study enhances organizational awareness and promotes stakeholder-driven improvements for better logistics service quality.

## 2. MATERIALS AND METHODS



**Figure 1.** Conceptual Framework

This study delves into the connection between Logistics Service Quality (LSQ) in UPB bonded warehouses and key factors: timeliness, information quality, personnel quality, and physical services. Treating these as independent variables, LSQ is the dependent one. Metrics like response time, information availability, staff attributes, and appearance are used for assessment. LSQ is measured via satisfaction, intention to continue, and likelihood of recommendation. SPSS analysis on a 5-point Likert Scale covers both descriptive and inferential components. Focused on seven registered UPB warehouses in Sri Lanka’s Western Province and the study samples 390 regular consignees from an estimated 13,020 due to time constraints, maintaining 95% confidence with 5% margin of error [2]. Convenience sampling collects data from the main UPB warehouses, selecting willing customers facing time-consuming procedures. Self-administered questionnaires via Google Forms are collected by researchers visiting warehouses, ensuring a representative approach with participant convenience.

### 3. RESULTS AND DISCUSSION

#### 3.1. Correlation Analysis

**Table 1.** Correlations Table

Correlations		LSQ
Timeliness	Pearson Correlation	0.560**
	Sig. (2-tailed)	< 0.001
Information Quality	Pearson Correlation	0.548**
	Sig. (2-tailed)	< 0.001
Personnel Quality	Pearson Correlation	0.466**
	Sig. (2-tailed)	< 0.001
Physical Service	Pearson Correlation	0.461**
	Sig. (2-tailed)	< 0.001

*Reference: Research Data*

According to the correlation analysis, it can be concluded that timeliness, information quality, personnel quality and physical quality are having a positive relationship with the dependent variable, LSQ.

#### 3.2. Regression Analysis

**Table 2.** Regression Coefficients Table

Coefficients <sup>a</sup>							
Model			Unstd. Coefficients		Std. Coefficients	t	Sig.
			B	Std. Err.	Beta		
1	(Constant)	$\beta_0$	1.144	0.300		3.816	< 0.001
	Timeliness	$\beta_1$	0.288	0.079	0.216	3.631	< 0.001
	Information Quality	$\beta_2$	0.188	0.082	0.161	2.304	0.022
	Personnel Quality	$\beta_3$	0.164	0.067	0.321	2.218	< 0.001
	Physical Service	$\beta_4$	0.106	0.081	0.089	1.305	0.013

a. Dependent Variable: LSQ

*Reference: Research Data*

The multiple linear regression model for the study is developed as follows.

$$LSQ = 1.144 + 0.288 \text{ Timeliness} + 0.188 \text{ Information Quality} + 0.164 \text{ Personnel Quality} + 0.106 \text{ Physical Service}$$

MLR model for the study is jointly significant indicating that all the independent variables are jointly affecting on the dependent variable, LSQ. The  $\beta$  values for all the independent variables are positive. It indicates that all timeliness, information quality, personnel quality and physical service variables have a positive impact on the LSQ.

The study dives into the Logistics Service Quality (LSQ) of Unaccompanied Passenger Baggage (UPB) bonded warehouses in Sri Lanka, aiming to uncover the influencing factors. Four core factors are examined: **timeliness**, assessed through customer response time, handover-to-receiving time, and meeting delivery timelines. Timely feedback and delivery are vital for enhanced service quality, with research confirming a positive link between timeliness and LSQ. **Information quality** focuses on providing timely and relevant shipment information, including tracking and real-time data. Such information is crucial for consignees to monitor their shipments, and accurate, timely data enhances service quality. Analysis affirms the positive impact of information quality on UPB logistics service quality. **Personnel quality** evaluates the expertise, behavior, and appearance of staff. Employees require proficiency in areas like freight handling and customs clearance. Effective interactions and responses influence customer satisfaction, supported by comprehensive analysis. **Physical service** involves consignee comfort and additional offerings by UPB operators. Indicators include a comfortable service area, clear explanations, versatile inquiry methods, transport options, and prompt issue resolution. Analysis validates a positive relationship between physical service indicators and LSQ. The study identifies four key drivers of logistics service quality in UPB bonded warehouses: timeliness, information quality, personnel quality, and physical service. These undergo rigorous statistical validation, confirming their significant impact on UPB logistics service quality in Sri Lanka. In addition to the primary objectives, secondary goals are met by identifying prevalent industry challenges faced by UPB consignees. Noteworthy issues include communication lapses leading to delays, errors by warehouse operators causing demurrages, cargo detentions without prior notice, and documentation errors. The most prominent issue involves incurring demurrages due to delayed cargo arrival notifications. Recommendations are proposed to enhance UPB industry performance, encompassing research and development for issue identification, technological adoption for real-time information dissemination, and streamlined operations through systems integration. Additionally, the importance of staff training, fair remuneration, and providing a safe and comfortable environment is highlighted. By adhering to these recommendations, UPB industry players can uplift their overall performance and upgrade their logistics service quality.

#### 4. CONCLUSION

In conclusion, this study primarily identifies factors impacting LSQ in UPB bonded warehouses in Sri Lanka. It addresses secondary objectives by recognizing challenges faced by consignees and proposing solutions to enhance LSQ. Descriptive stats show agreement, and inferential analysis confirms Timeliness, Information Quality, Personnel Quality, and Physical Service as positive influences. Key issues include delayed cargo notifications causing demurrages. Recommendations encompass technology and best practices, aiming to improve work environment, incentivize employees, and enhance awareness. These suggestions aim to elevate logistics service quality in UPB bonded warehouses.

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