

THE MEDIATING ROLE OF PRICE BETWEEN LOGISTICS SERVICE QUALITY AND CUSTOMER SATISFACTION

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ABSTRACT

This study delves into the intricacies of logistics service quality (LSQ) and its profound impact on customer satisfaction within the context of a logistics service providing company. Leveraging a comprehensive survey instrument, the study explores various dimensions, including personnel contact quality (PCQ), information quality (IQ), order accuracy (OA), timeliness (T), delivery services (DS), and communication quality (CQ). The findings underscore the significance of maintaining high LSQ standards to enhance customer satisfaction. The research also establishes a notable correlation between LSQ, pricing strategies, and overall customer satisfaction. Through meticulous regression and mediation analyses, it is revealed that both LSQ and price play pivotal roles in shaping customer satisfaction, with the latter acting as a significant mediating factor. The results suggest strategic considerations for Bullet Logistics, emphasizing continual focus on LSQ dimensions and competitive pricing strategies. This project offers valuable insights for businesses seeking to optimize customer satisfaction in the logistics sector.

Key Words: *Logistics Service Quality (LSQ), Price Perception, Delivery Services, Communication Quality, Timeliness, Order Accuracy, Customer Loyalty, Customer Satisfaction*

Introduction

In the dynamic landscape of logistics, the intersection of service quality (SQ) and customer satisfaction (CS) stands as a linchpin for success. This project immerses itself in the operations of Bullet Logistics India Pvt. Ltd., meticulously dissecting the dimensions of LSQ and unravelling its intricate dance with CS. Through a robust survey mechanism,

we delve into the nuances of personnel contact, information precision, order accuracy, timeliness, delivery services, and communication quality. As businesses navigate the delicate balance of pricing strategies, we scrutinize the correlation between LSQ, pricing dynamics, and the ultimate arbiter—customer satisfaction. Our analytical journey traverses regression and mediation analyses, illuminating the symbiotic roles of LSQ and pricing in shaping customer contentment. This project extends beyond statistics; it offers actionable insights, guiding Bullet Logistics and similar enterprises toward strategies that elevate LSQ, ensuring a trajectory of unwavering customer satisfaction in the intricate realm of logistics.

Need for the study

- **Enhancing Customer Satisfaction:** The study addresses the need to understand and improve LSQ to enhance overall CS.
- **Informing Strategic Decision-Making:** By exploring the influence of pricing strategies, the research aids in informed decision-making for logistics companies seeking a competitive edge.
- **Filling Knowledge Gaps:** The research contributes by filling gaps in the existing literature, offering fresh insights into the dynamics of LSQ and pricing.
- **Optimizing Technological Innovations:** The study's findings can guide logistics firms in leveraging technological advancements to enhance customer experiences.
- **Strategic Market Positioning:** By unravelling the link between SQ, pricing, and CS, the research assists in strategic positioning within the highly competitive logistics market.

Review of Literature

Quality in products and services has been a paramount concern, yet the realm of service quality in logistics remains underexplored (Parasuraman et al., 2013). Gupta et al. (2022) navigates the intricacies of CS in the logistics industry, emphasizing the need for a nuanced understanding of service quality aspects. Qalati et al. (2019) delve into consumer purchasing behaviour as a mediator, shedding light on the interplay between pricing and customer satisfaction. E-commerce's dynamism is scrutinized by Ebru (2019), emphasizing the critical role of LSQ. The collegiate setting is explored by Muhammad et al. (2017), emphasizing reliability and responsiveness in courier services. Hasan Uvet (2020) unveils the significant correlation between LSQ dimensions and CS. Hafez et al. (2021) amplify this understanding, investigating the nexus between LSQ and e-shopper satisfaction and loyalty in Egypt. Chen et al. (2004) shift focus to strategic purchasing and supply management, underlining their pivotal role in overall business performance. Anderson et al. (1994) substantiates the positive correlation between customer satisfaction and profitability, with significant implications for the Swedish market. Ekinçi et al. (2006) extend the scope to hospitality services, unravelling antecedents and consequences of consumer satisfaction.

Research Gap:

- Existing studies fail to completely investigate the link amongst LSQ aspects and CS, highlighting the need for a targeted examination.
- There is a lack of research on how pricing tactics in logistics impact CS and purchasing behaviour, highlighting the need for a focused study to address this gap in the literature.

Research Methodology:

I. Type of research:

This study uses quantitative research methods. Quantitative research is gathering and analysing numerical data to identify patterns, correlations, and connections between variables.

II. Population:

The specific population for this study is the customers of Bullet logistics Pvt Ltd company under investigation. The population include businesses that have utilized the services of the company.

III. Sampling Method:

Convenience sampling is a non-probability sampling approach that selects persons or objects from a community based on their ease of availability to the researcher. Rather of employing a random or systematic selection method, participants are chosen based on their availability and willingness to participate in the study.

IV. Sample size:

A total of 56 respondents i.e., businesses who are the customers of Bullet logistics India Pvt Ltd.

V. Data collection method:

Primary Data:

Primary data for this study was acquired via survey questionnaires. Customers of the logistics organization were given survey questionnaires to gather their perceptions, satisfaction levels, and preferences.

Secondary Data:

Secondary data were gathered from corporate records as well as online sources in this case.

VI. Data collection instrument

The data collection instrument utilized a set of structured questionnaires carefully crafted to address specific dimensions related to logistics service quality (LSQ), including personnel contact quality (PCQ), information quality (IQ), order accuracy (OA), timeliness quality (TQ), and customization quality (CQ). Customer satisfaction (CS) was assessed based on

customer feedback and perceptions. Additionally, questions related to the pricing aspect were integrated to understand the potential mediating role of price in influencing customer satisfaction.

Statistical Tools:

Several statistical techniques in SPSS may be implemented in this study on LSQ, CS, and the mediating effect of price:

1. Multiple Regression Analysis

Multiple Regression Analysis is a statistical approach that examines the relationship between a dependent variable and two or more independent variables while controlling for other relevant factors.

2. Correlation Analysis

This method is used to assess the strength and direction of a relationship between two or more variables. This study employed correlation analysis to evaluate the links between LSQ, cost, and CS.

3. Mediation Analysis

The application of mediation analysis to explore the indirect impact of an independent variable on a dependent variable through one or more mediating factors. This study used mediation analysis to evaluate pricing's role as a mediator in the relationship between LSQ and CS.

Conceptual Framework:

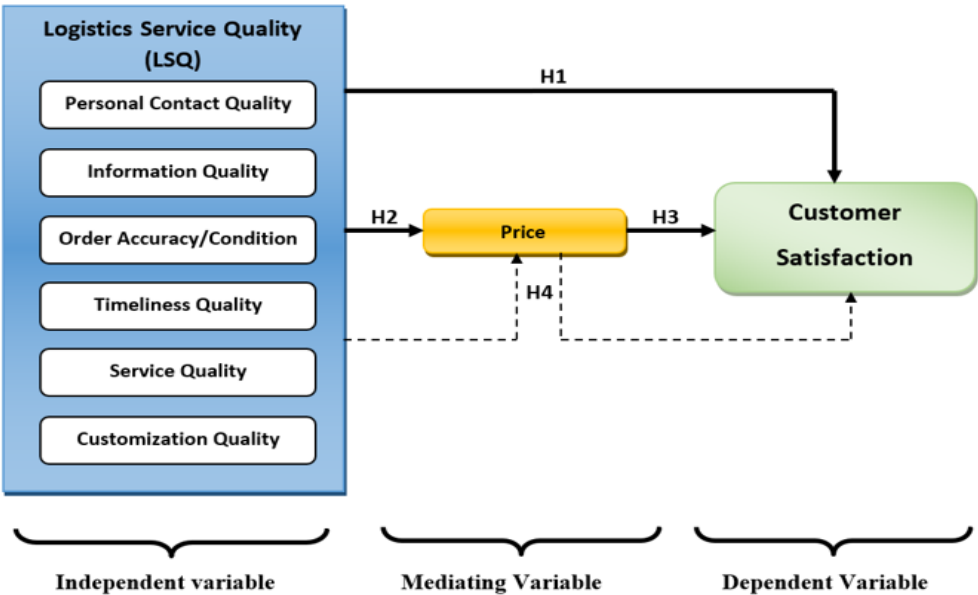


Figure 1: Conceptual Framework

Data analysis & interpretations:

Multiple linear regression analysis:

Null Hypothesis (H1): LSQ has no significant impact on CS.

Alternate Hypothesis (Ha1): LSQ has a significant impact on CS.

Figure 3: Table showing the Multiple linear regression Analysis SPSS Output

Model Summary ^a									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson
					R Square Change	F Change	df1	df2	
1	.912 ^a	.831	.811	.341	.831	40.218	6	49	.000

a. Predictors: (Constant), CQ, OAC, TQ, IQ, PCQ, DS

b. Dependent Variable: CS

ANOVA ^a					
Model		Sum of Squares	df	Mean Square	Sig.
1	Regression	28.077	6	4.679	40.218
	Residual	5.701	49	.116	.000 ^b
	Total	33.778	55		

a. Dependent Variable: CS

b. Predictors: (Constant), CQ, OAC, TQ, IQ, PCQ, DS

Inference:

The R-squared value is 0.831, indicating that the model explains 83.1% of the variation in the dependent variable. The individual regression coefficients have p-values less than 0.05, indicating that all relationships between the independent and dependent variables are statistically significant. The F-statistic is 40.218, indicating strong significance (p-value < 0.001). This shows that the model is a good match to the data.

The findings clearly show that the model fits the data well and accounts for a significant percentage of the variation in the dependent variable. All of the independent variables in the model are statistically significant, implying that they have a substantial influence on the dependent variable. The null hypothesis (Ho) is rejected. Thus, it was established that LSQ had a considerable influence on CS.

Correlation analysis – 1

Null Hypothesis (H2): LSQ has no significant impact on Price.

Alternate Hypothesis (Ha2): LSQ has no significant impact on Price.

Figure 4: Table showing the Correlation Analysis-1 SPSS output

Descriptive Statistics			
	Mean	Std. Deviation	N
LSQ	4.2996	.62824	56
Price	4.10	.992	56

Correlations			
		LSQ	Price
LSQ	Pearson Correlation	1	.547**
	Sig. (2-tailed)		.000
	N	56	56
Price	Pearson Correlation	.547**	1
	Sig. (2-tailed)	.000	
	N	56	56

** . Correlation is significant at the 0.01 level (2-tailed).

Inference:

The correlation coefficient for LSQ and Price is 0.547, indicating a moderate positive link. The null hypothesis is rejected; the evidence indicates that there is a positive link between LSQ and P, and that LSQ is an excellent predictor of P.

Correlation analysis – 2

Null Hypothesis (H3): Price has a significant impact on CS.

Alternate Hypothesis (Ha3): Price has no significant impact on CS.

Figure 5: Table showing the Correlation Analysis-2 SPSS Output

Descriptive Statistics			
	Mean	Std. Deviation	N
Price	4.10	.992	56
CS	4.33	.784	56

Correlations			
		Price	CS
Price	Pearson Correlation	1	.759**
	Sig. (2-tailed)		.000
	N	56	56
CS	Pearson Correlation	.759**	1
	Sig. (2-tailed)	.000	
	N	56	56

** . Correlation is significant at the 0.01 level (2-tailed).

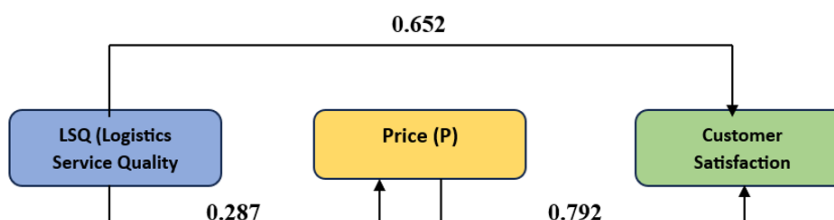
Inference:

The result indicates that there is a high positive association between Price and CS. The Pearson correlation coefficient is 0.759, which is considerably higher than zero (p-value < 0.001). This signifies that the null hypothesis is rejected. The data suggests that there is a positive association between Price and CS.

Mediation analysis

Null Hypothesis (H4): Price (P) does not operate as a mediator in the relationship between LSQ and CS.

Alternate Hypothesis (Ha4): Price (P) acts as a mediator in the relationship between LSQ and CS.



Mediation analysis using process_macro

Independent Variable (X) = Logistics Service Quality (LSQ_Mean)

Dependent Variable (Y) = Customer satisfaction (CS_Mean)

Mediating Variable (M) = Price (P_Mean)

Table showing the Mediation Analysis output using SPSS Process_Macro

OUTCOME VARIABLE:						
P_Mean						
Model Summary						
R	R-sq	MSE	F	df1	df2	p
.5475	.2997	.7023	23.1152	1.0000	54.0000	.0000
Model						
	Coeff	se	t	p	LLCI	ULCI
constant	.3770	.7814	.4825	.6314	-1.1896	1.9437
LSQ	.8648	.1799	4.8078	.0000	.5042	1.2254
OUTCOME VARIABLE:						
CS_Mean						
Model Summary						
R	R-sq	MSE	F	df1	df2	p
.8939	.7991	.1280	105.4109	2.0000	53.0000	.0000
Model						
	Coeff	se	t	p	LLCI	ULCI
constant	-.1505	.3344	-.4502	.6544	-.8212	.5201
LSQ	.7050	.0918	7.6821	.0000	.5209	.8891
P_Mean	.3547	.0581	6.1044	.0000	.2381	.4712
***** DIRECT AND INDIRECT EFFECTS OF X ON Y						

Direct effect of X on Y						
Effect	se	t	p	LLCI	ULCI	
.7050	.0918	7.6821	.0000	.5209	.8891	
Indirect effect(s) of X on Y:						
	Effect	BootSE	BootLLCI	BootULCI		
P_Mean	.3067	.1000	.1390	.5318		

Inference:

According to the results of the mediation analysis, the null hypothesis is rejected. It implies that Price (P) acts as a mediator between LSQ and CS. The direct effect of LSQ on CS is statistically significant, indicating that higher LSQ correlates with higher CS.

This finding shows that Price plays an important role in the overall influence of LSQ on CS. A rise in LSQ results in a greater CS, which is largely mediated by Price.

SUMMARY OF FINDINGS

Multiple Linear Regression Analysis: Logistics service quality attributes significantly influence customer satisfaction, emphasizing the importance of maintaining high standards.

Correlation Analysis-1: Improvement in LSQ may result in a price increase, showing a connection between perceived cost and logistics service quality.

Correlation Analysis-2: Higher prices correlate with increased customer satisfaction, possibly due to perceptions of higher quality.

Mediation Analysis: LSQ has a significant direct positive relationship with CS. The mediation of price in this relationship is also statistically significant, highlighting the need for competitive pricing alongside high LSQ standards.

Conclusion

This study throws light on the critical importance of service quality in the logistics industry. Customers are extremely happy with a variety of areas, including personal interaction, information quality, order correctness, and fast delivery. The smart tracking method greatly improves overall satisfaction. Customer loyalty is inextricably linked to good communication and reliable, timely services. Interestingly, there is a link between how customers perceive costs and logistical service quality. Customers who value the service quality tend to rank pricing higher. To remain competitive, firms should maintain high service standards and proactively modify prices in response to client expectations. Long-term success in the logistics business will require embracing innovation and putting consumers first.

LIMITATIONS OF THIS STUDY:

- **Sample Size and Scope:** The study was carried out with a small sample size, largely consisting consumers of Bullet Logistics India Pvt Ltd.
- **Limited in depth analysis:** Due to time and resource restrictions, the study may not have looked as far into many elements of logistics service quality, customer satisfaction, and price mediation.

- **Single-Company Focus:** The research focused on Bullet Logistics India Pvt Ltd, a single company. While this allowed for a thorough investigation, it may restrict the findings' applicability to other logistics organisations and sectors.
- **Inexperience:** The analysis conducted is subject to the experience level of the researcher. It's important to acknowledge that professional analysts with more expertise might produce more precise results.

FUTURE SCOPE

The future of this scientific initiative offers exciting opportunities for study. To begin, researching deeper into consumer opinions of pricing in connection to logistics service quality may yield more complex data. Furthermore, researching emerging technologies and their influence on the logistics industry would be beneficial. Another interesting avenue to pursue is investigating how logistics sustainability strategies affect customer happiness. Furthermore, research into the impact of promotional methods on customer loyalty might give logistics organisations with useful knowledge. Continuously monitoring client preferences and modifying services as needed will be critical. Lastly, considering the global context and cultural influences on logistics satisfaction could broaden the scope of this research, offering a more comprehensive understanding of customer expectations in diverse markets.

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