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The Effect of Logistic Service Quality on Customer Satisfaction Using Courier Service in Banyumas

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ABSTRACT

This study examines the impact of Logistic Service Quality (LSQ) on customer satisfaction among users of courier services in Banyumas Regency. The study included 210 respondents, evenly distributed across all sub-districts in Banyumas Regency. Determination of the number of samples using purposive sampling. This study only focuses on consumer perceptions of the experience of using courier services. This study employs five LSQ dimensions: timeliness (T), order accuracy (A), information quality (I), personal contact quality (C), and handling of non-conformance orders (O), comprising a total of 22 question attributes. This research found that the five dimensions of LSQ have a simultaneous effect of 72% on customer satisfaction. Moreover, the LSQ variable that has the most influence on customer satisfaction is personal contact ability (C), with a beta value of 0.056.

Keywords: Courier Service, Logistic Service Quality (LSQ), Customer Satisfaction, Purposive Sampling.

ABSTRAK

Penelitian ini mengkaji dampak Kualitas Layanan Logistik (LSQ) terhadap kepuasan pelanggan di antara pengguna layanan kurir di Kabupaten Banyumas. Penelitian ini melibatkan 210 responden, yang tersebar merata di semua kecamatan di Kabupaten Banyumas. Penentuan jumlah sampel menggunakan purposive sampling. Penelitian ini hanya berfokus pada persepsi konsumen terhadap pengalaman menggunakan layanan kurir. Penelitian ini menggunakan lima dimensi LSQ: ketepatan waktu (T), akurasi pesanan (A), kualitas informasi (I), kualitas kontak pribadi (C), dan penanganan pesanan yang tidak sesuai (O), yang terdiri dari total 22 atribut pertanyaan. Penelitian ini menemukan bahwa kelima dimensi LSQ memiliki efek simultan sebesar 72% terhadap kepuasan pelanggan. Selain itu, variabel LSQ yang paling berpengaruh terhadap kepuasan pelanggan adalah kemampuan kontak pribadi (C), dengan nilai beta sebesar 0,056.

Keywords: *Courier Service, Logistic Service Quality (LSQ), Customer Satisfaction, Purposive Sampling.*

1. Introduction

The rapid development of online commerce in Indonesia has fundamentally changed the structure of logistics demand. The growth of internet users and e-commerce transactions has increased the need for fast, accurate, and trackable delivery services. Recent empirical data and studies in Indonesia indicate a surge in internet penetration and e-commerce platform use, positioning courier services as critical infrastructure in the last-mile supply chain (Lorentsia et al., 2025). The increasing demand for courier delivery services requires companies to improve service quality to maintain their market position and achieve greater customer satisfaction and loyalty. Customer satisfaction in the context of last-mile delivery is strongly influenced by the quality of the delivery service. Research by Aljohani, 2024 shows that elements such as delivery time, tracking accuracy, and delivery window flexibility significantly influence customer satisfaction in the online shopping experience. Meanwhile, (Vrhovac et al., 2024) emphasized that modern LSQ needs to consider real-time tracking, customer service responsiveness, and delivery flexibility as important indicators of customer satisfaction in the era of platform-based logistics. Furthermore, a study in the Mekong Delta region by Tran Trung et al., 2025 identified several factors in the quality of last-mile delivery logistics services—including

delivery time, reliability, delivery costs, and courier staff service—that influence customer value perceptions. This perceived value then impacts customer satisfaction and loyalty. Interestingly, they also found that the return rate negatively affects customer value perceptions, suggesting that a flexible, clear return policy is crucial for customer satisfaction (Aljohani, 2024). One method to identify which service quality attributes most influence customer satisfaction is the Logistics Service Quality (LSQ) framework and it is an important concept in supply chain management used to measure the extent to which logistics service providers can meet customer expectations regarding the services provided. According to Mentzer Flint, and Kent (2001), LSQ is defined as the degree to which the logistics process can meet or exceed customer expectations through dimensions such as delivery timeliness, product condition, information accuracy, and service reliability. This definition has become the basis for various subsequent studies that have developed LSQ measurement scales in more specific contexts, such as e-commerce and last-mile delivery services (Thai, 2013). In addition, LSQ is also considered the most effective tool for assessing the quality of logistics services and has a significant influence on customer satisfaction and loyalty (Mentzer et al. n.d.).

The initial models developed by Mentzer and subsequent adaptations serve as the basis for measuring LSQ in B2C or e-commerce contexts. However, there is no consensus on the list of priority dimensions; hence, many contemporary studies adapt and add dimensions (e.g., order returns, order availability, greenness) to suit the local context of the courier and last-mile industries. Empirical evidence from Indonesian research reinforces the role of LSQ as a key predictor of customer satisfaction and loyalty. Quantitative studies of courier service users across several provinces (e.g., multi-provincial studies and surveys of Tokopedia/Shopee users) consistently find that variables such as timeliness, order availability, order accuracy, and information quality significantly influence customer satisfaction, which, in turn, influences repurchase intentions and loyalty. However, results also vary: some studies find that dimensions such as product condition or return policies are not always significant in certain contexts, so prioritizing service improvements needs to be tailored to customer segments and platform business models (Handoyo et al., 2025). Another study by (Virantau et al., 2025) showed that digital integration in e-logistics systems—such as real-time tracking and automatic notifications—significantly increased customer satisfaction perceptions because it minimized uncertainty and increased process transparency.

This research is a development of previous research which measured the level of satisfaction of courier service users in Banyumas Regency using the Theory of Inventive Problem Solving (TRIZ) and Importance Performance Analysis (IPA) methods (Qisthani et al., 2022; Qisthani & Yamani, 2023). The purpose of this study was to find out the relationship between the independent variables timeliness (T), order accuracy (A), information quality (I), personal contact quality (C), and the ability to handle order problems (O) with the dependent variable (Y) customer satisfaction. Multiple regression tests, namely the T-test and the F-test, are used for calculations in this study. Compared to previous research, the novelty of this study is the number of courier service providers that are the focus of the research and the LSQ dimensions used, and the statistical test method used (Aziz et al., 2025; Hamat et al., 2024; Sze Yin Ho et al., n.d.).

The dimension that most affected customer satisfaction was delivery accuracy (Sze et al., 2012), while according to(Hui et al., 2025; Koesmariadi & Agusinta, 2024; Lin et al., 2023), delivery speed and delivery information service are the biggest factors influencing customer satisfaction and has a positive influence on customers' intention to reuse the service. The LSQ dimension used Mentzer et al. (2001) divided LSQ into the functional quality and technical quality, which consists of nine dimensions (Mentzer et al., 2001.) while (Choi et al., 2019) divide the dimensions of LSQ me into five dimensions, namely quality of information, quality of delivery, quality of orders, price of delivery and customer service. This study focuses solely on the five dimensions of LSQ in the five courier services under investigation, namely Pos Indonesia, JNE, TIKI, J&T, and SiCepat. The results of this study are based on the user's perspective and are expected to inform courier services' innovation and improvement efforts.

2. Methods

The initial phase of this study involved identifying the research object, followed by developing a questionnaire that utilized a five-point Likert scale, ranging from "strongly disagree" to "strongly agree." The sample size was determined using a purposive sampling approach, also referred to as judgmental sampling, in which participants are deliberately chosen by the researcher. This non-random sampling technique does not rely on theoretical principles to define the number or selection of respondents. The questionnaire distributed consisted of 22 attributes (Fanani et al., 2020), obtained from previous research and adjusted for several purposes. The questions cover 5 dimensions of LSQ, namely timeliness (T), order accuracy (A), information quality (I), member contact quality (C), and problem-solving ability (O) with a total of 22 question attributes. The LSQ dimensions and question attributes can be seen in Figure 1 and Table 1.

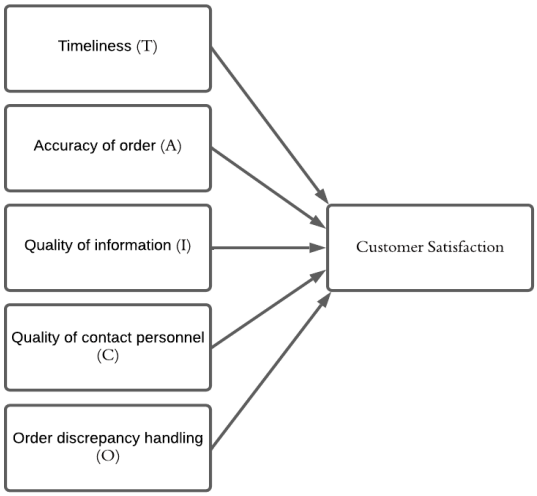

Figure 1. LSQ Dimension

Table 1. Question Attribute

Question Attribute	Description	Question Attribute	Description
T1	On time delivery	I4	Clarity of terms and conditions of service
T2	Packing setup speed	I5	Package search
T3	Delivery time speed	I6	Use of information technology such as website applications, etc.
T4	Agent service speed	I7	Confidentiality of sender information
A1	Delivery address accuracy	C1	Clear procedure
A2	Accuracy of terms and conditions	C2	Simple procedure
A3	Receipt accuracy	C3	Provision of alternative recipients
A4	Tracking accuracy	C4	Provision of alternative senders
I1	Easy access to service information	O1	Decent compensation
I2	Information accuracy	O2	Readiness to process complaints
I3	Information clarity	O3	Complaint settlement

After collecting data, the next step is to test the validity and reliability of the questionnaire. After the questionnaire is proven valid and reliable, the next step is to perform statistical tests using the classical assumption tests of normality, homoscedasticity, non-autocorrelation, and non-multicollinearity. After the classical assumption tests are fulfilled, namely, normal distribution, no symptoms of multicollinearity, no symptoms of heteroscedasticity, and no symptoms of autocorrelation, the next step is to calculate multiple regression tests, consisting of T and F tests. The multiple regression test is used to determine the relationship between several independent variables (T, A, I, C, O) and the dependent variable (Y), thereby understanding the relationship between the independent and dependent variables simultaneously.

3. Result and Discussion

The distribution of online questionnaires yielded 220 respondents who used five courier services: Pos Indonesia, JNE, TIKI, J&T, and SiCepat, in Banyumas Regency. The results of the user recapitulation of each courier can be seen in Table 2.

Table 2. Data Recapitulation

Courier Service Provider	Number of Respondents (n)	Percentage (%)
POS Indonesia	40	19
JNE	58	28
TIKI	20	10
J&T	52	25
Si Cepat	40	19
Sum	210	100

The number of users on each courier is obtained from the table above. JNE is the most widely used courier service provider in Banyumas Regency, with a percentage of 28%, followed by J&T at 25%. From a total of 210 respondents, the following describes the characteristics of respondents spread across almost all sub-districts in Banyumas Regency, as seen in Table 3. After recapitulating the data and knowing the respondents' characteristics, the next step is to test the validity and reliability of the questionnaire that we use. From the validity test results, all variables from the LSQ dimensions, namely T, A, I, C, O, are valid because r count > r table. The value of the R table with df 210 is equal to 0.135. As for the value of the reliability test, where r count > r table with an alpha value of 0.901 > r table of 0.135, this questionnaire is considered valid and reliable, or consistent. The results of the validity and reliability tests are presented in the Table 4 and 5. Next, the step is to perform statistical tests using classical assumption tests and multiple regression tests.

Table 3. Characteristics of Respondents

Respondent	Characteristics of Respondents	Percentage (%)	Respondent	Characteristics of Respondents	Percentage (%)
Gender	Male	53,7	Profession	Freelancer	1
	Female	46,3		Housewife	1,9
Age	< 20 years	9,3		Entrepreneur	4,6
	20 - 30 years	61,1		Lecture	13,8
	31 - 40 years	21,3	Income	< 1.000.000	34,3
	41 - 50 years	7,4		1.000.000 - 3.000.000	15,7
	> 50 years	0,9		3.000.000 - 5.000.000	27,8
				> 5.000.000	22,2
Profession	Students	37	Courier Service Usage per Month	≤ 2	75
	Private Sector Employee	38,9		3 - 5	21,3
	Government Employees	2,8		> 6	3,7

After recapitulating the data and understanding the respondents' characteristics, the next step is to test the questionnaire's validity and reliability. From the validity test results, all variables from the LSQ dimensions, namely T, A, I, C, O, are valid because r count > r table. The value of the R table with df 210 is equal to 0.135. As for the value of the reliability test, where r count > r table with an alpha value of 0.901 > r table of 0.135, this questionnaire is considered valid and reliable, or consistent. The results of the validity and reliability tests are presented in the figure. Next, perform statistical tests using classical assumption tests and multiple regression tests.

Table 4. The Result of Validity Test

		T	A	I	C	O	Y
T	PC	1	.758**	.721**	.681**	.655**	.708**
	Sig.		0	0	0	0	0
	N	210	210	210	210	210	210
A	PC	.758**	1	.837**	.738**	.669**	.756**
	Sig.	0		0	0	0	0
	N	210	210	210	210	210	210
I	PC	.721**	.837**	1	.804**	.736**	.796**

		T	A	I	C	O	Y
	Sig.	0	0		0	0	0
	N	210	210	210	210	210	210
C	PC	.681**	.738**	.804**	1	.781**	.776**
	Sig.	0	0	0		0	0
	N	210	210	210	210	210	210
O	PC	.655**	.669**	.736**	.781**	1	.731**
	Sig.	0	0	0	0		0
	N	210	210	210	210	210	210
Y	PC	.708**	.756**	.796**	.776**	.731**	1
	Sig.	0	0	0	0	0	
	N	210	210	210	210	210	210

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

Table 5. The Result of Reability Test

Cronbach's Alpha	N of Items
0,901	6

3.1 Classic Assumption Test

According to Imam Ghozali, 2021, the regression model is said to be normally distributed if the plotting data (dots) that describe the actual data follow a diagonal line. The normality test of the data is crucial in testing whether the dependent and independent variables are normally distributed. The test results typically contain data that are normally distributed, or the regression model is close to normal.

Table 6. The Result of Normality Test

	Statistic	Df	Sig. (2-tailed)
One - Sample Kolmogrov-Smirnov Test	0,053	210	0,2

Conclusion of Normality Test: Asymp Value. Sig (2 tailed) > 0.05, then the regression model is normally distributed.

Table 7. The Multicollinearity and Heteroscedasticity Test

	Sig	Collinearity	
		Tolerance	VIF
Constant	0,025		
T	0,065	0,376	2,658
A	0,55	0,247	4,05
I	0,967	0,213	4,705
C	0,187	0,266	3,755
O	0,158	0,346	2,89

According to ,Imam Ghozali, 2021, there is no multicollinearity if the tolerance value is > 0.100 and VIF < 10.00. Regarding the heteroscedasticity test using a shear test with the provision that the sig value is greater than 0.05, there are no indications of heteroscedasticity. It is based on the table. In conclusion, there are no symptoms of multicollinearity and heteroscedasticity. Moreover, can proceed to the multiple regression statistical test.

3.2 Multiple Regression Test

T-test aims to determine whether there is a partial (own) effect given by the independent variable (T, A, I, C, O) on the dependent variable (Y).

1. If the value of sig < 0.05, or t count > t table, then there is an influence of the independent variable on the dependent variable.
2. If the sig value > 0.05, or t count < t table, then there is no effect of the independent variable on the dependent variable.
   95% confidence level, alpha = 0.05
   Hypothesis:
   H1: There is an effect of timeliness (T) on customer satisfaction (Y)
   H2: There is an effect of order accuracy (A) on customer satisfaction (Y)
   H3: There is an influence of information quality (I) on consumer satisfaction (Y)
   H4: There is an influence of the quality of personnel contact (C) on customer satisfaction (Y)
   H5: There is an effect of problem-solving ability (O) on customer satisfaction (Y).

Table 8. The Result of Multiple Regression

Variables	Beta Value	T	Sig
Constant	0,319	1,858	0,065
Timeliness (T)	0,034	2,318	0,021
Accuracy of order (A)	0,04	1,992	0,048
Quality of information (I)	0,038	3,306	0,001
Quality of contact personal (C)	0,052	3,160	0,002
Order discrepancy handling (O)	0,046	2,670	0,008
R Value	0,894		
R Square	0,721		
F Count	105,303		
Sig. F	0,0000		
Total N	210		

3.3 Hypothesis Results:

Sig value 0.021 < 0.05. Thus, H1 is accepted, indicating that there is an effect of T on Y. The timeliness (T) of delivery has a significant influence on customer satisfaction (Y) among users of courier services. This means that the more punctual the delivery and the faster the packing process, the higher the customer satisfaction. Timeliness is one of the independent variables that previous researchers have widely studied, which simultaneously affects the dependent variable.

Sig value 0.048 < 0.05. Therefore, H2 is accepted, indicating that there is an effect of A on Y. Order accuracy (A) has a significant influence on customer satisfaction (Y) among courier service users. This means that the more precise the delivery address, receipt, tracking, and terms and conditions, the more satisfied customers will be with the courier service.

Sig value 0.001 < 0.05. Therefore, H3 is accepted, indicating that there is an effect of I on Y. The quality of information (I) in the form of easy access to service information, the accuracy of the information, clarity of information, clarity of service terms and conditions, package tracking, use of the information such as websites, android applications, etc. as well as the confidentiality of sender information, affect customer satisfaction (Y).

Sig value 0.002 < 0.05. Therefore, H4 is accepted, indicating that there is an effect of C on Y. The ability/quality of personal contact (C), in the form of clear and concise procedures and alternative recipients and senders, influences customer satisfaction (Y) among users of courier services.

Sig value 0.008 < 0.05. Therefore, H5 is accepted, which means there is an effect of O on Y. The ability to handle problems (O), delivering inappropriate compensation, promptness in processing complaints, and settling complaints all influence customer satisfaction (Y).

The table above shows which independent variables (T, A, I, C, O) influence the dependent variable (Y) by examining the variable with the highest beta value. Moreover, the independent variable with the highest beta value is personal contact ability (C), with a beta value of 0.052. This is because consumers need certainty that the intended recipient or an alternative recipient can receive the package sent by the courier. Additionally, consumers want clear and concise procedures that facilitate the sending of goods.

The coefficient of determination, R-squared, shows a value of 0.721, indicating that the independent variables (timeliness, order accuracy, information quality, personal contact ability, and problem-solving ability) account for 72.1% of the variation in customer satisfaction using courier services, while the remaining 27.9% is attributed to other variables not examined in this study. So, when made into an equation, it can be concluded as:

$$Y : 0{,}319 + 0{,}034T + 0{,}04A + 0{,}038I + 0{,}052C + 0{,}046O$$

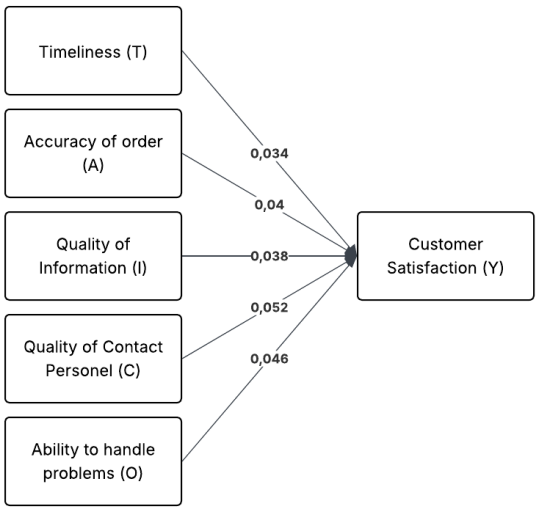

Figure 3. The relationship between variables TAICO and Y

3.4 Multiple Regression F Test

The F test aims to determine whether there is a simultaneous (together) effect given by the independent variable (X) on the dependent variable (Y).

Sig value 0.000 < 0.05 So H6 is accepted which means that there is an effect of T, A, I, C, O simultaneously on Y.

While using the F test, the F table obtained is 1.875575. The value of F table < F Count (105.303) then there is a simultaneous T A I CO O effect on Y.

4. Conclusion

Based on the results and discussion, it can be inferred that all independent variables—namely timeliness (T), order accuracy (A), information quality (I), personal contact ability (C), and problem-solving ability (O)—significantly influence customer satisfaction with courier services, including Pos Indonesia, JNE, TIKI, J&T, and SiCepat. This conclusion is supported by the results of the multiple regression analysis using the *t*-test, which confirmed that all five hypotheses were accepted. Furthermore, the *F*-test results indicate that the variables T, A, I, C, and O collectively have a simultaneous effect on customer satisfaction (Y). The coefficient of determination (R^2) value of 0.721 suggests that these independent variables explain 72.1% of the variation in customer satisfaction, while the remaining 27.9% is attributed to other factors not examined in this research.

Among the five variables, *personal contact ability* exerts the most substantial impact on customer satisfaction, as indicated by the highest beta coefficient value of 0.052. This dimension encompasses clear and concise service procedures, staff responsiveness, and the availability of alternative options for senders and recipients. The findings of this study are derived solely from customer perceptions of courier services. Therefore, it is recommended that courier companies—particularly those operating in the Banyumas Regency—continuously enhance their service quality to increase customer satisfaction and loyalty. Improved customer satisfaction fosters stronger loyalty, which ultimately contributes to higher sales and profitability (Umair et al., 2019)

For future research, it is suggested to employ more advanced statistical techniques, such as Structural Equation Modeling–Partial Least Squares (SEM-PLS), to gain a deeper understanding of the relationships between LSQ dimensions and customer satisfaction. Additionally, expanding the sample size may yield more generalizable results. Subsequent studies could also explore the influence of respondents' demographic characteristics on LSQ variables affecting customer satisfaction.

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