FACTORS INFLUENCING SERVICE QUALITY OF LOGISTICS PROVIDERS IN THAILAND

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Abstract

This quantitative research aimed to examine the factors influencing the service quality of logistics providers in Thailand by analyzing direct and indirect factors as well as causal relationships affecting customer satisfaction. The study focused on two major logistics service providers: Kerry Express and Flash Express. The research framework integrates the dimensions of service quality (SERVQUAL) and the marketing mix (5Ps). The Research data were collected through online questionnaires and analyzed using IBM SPSS and IBM AMOS 24 through structural equation modeling (SEM). The model indicated limited overall fit (χ^2/df = 11.24, RMSEA = 0.143, CFI = 0.354, TLI = 0.272), yet several path coefficients were statistically significant. Service quality demonstrated a strong positive effect on customer satisfaction (β = 0.50), while the marketing mix also showed a moderate positive effect (β = 0.25).

The research results revealed that cost, including both the price and the service fees, was identified as the most important factors driving customers to select a logistics provider. Consumers need the good value, timeliness and safety of goods during transit. In addition, trust, customer assurance, and tangibility were found to directly influence customer satisfaction, particularly in after-sale service, for instance, handling lost or damaged parcels promptly.

The study concludes that the service quality is an antecedent of customer satisfaction and represents an important area on which logistics services providers should focus to improve their business strategies and to achieve competitive advantage.

Keywords: Customer satisfaction, Logistics, Marketing mix, Service quality, Transportation service

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Introduction

Current marketing trends are influenced by rapidly developing digital technology and changing consumer behavior (Chaffey, 2020). With data, artificial intelligence (AI), and digital platforms, businesses can access customers more accurately and adapt strategies to align with consumer trends more quickly and efficiently. At the same time, brands having a role in society and prioritizing environmental concerns are key factors in building trust and loyalty from consumers.

Thailand's marketing landscape has evolved dramatically, with consumers increasingly abandoning traditional brick-and-mortar shopping in favor of e-commerce platforms. This shift has made parcel delivery services essential to everyday life (DHL eCommerce, 2024). Government and private logistics companies across the nation have responded by adopting more strategic approaches and contributing significantly to economic growth. Competition in this sector revolves around multiple critical elements: service quality, service reliability, service responsiveness, product quality and costs. Maintaining or elevating consumer expectations in these factors helps increase satisfaction and long-term competitiveness (OECD, 2020). Additionally, consumer behavior has been impacted by the COVID-19 pandemic and measures to prevent its spread (such as social distancing, working from home, hybrid work models, and online learning), resulting in consumers staying home more and turning to online shopping, particularly for food delivery services. "Convenience" has become a key driving factor (Tanaveerakul et al., 2024).

Service quality also correlates with the marketing mix framework known as the 5Ps: Product, Price, Place, Promotion, and People. These elements work together to establish standards and fulfill customer expectations. Products must deliver quality while addressing specific needs. Pricing should offer genuine value to consumers. Locations need to be easily accessible. Promotional efforts should reach the intended audience effectively. Staff members require adequate training and service capabilities. The objective of this article focuses on studying factors affecting logistics service systems based on the service quality model (SERVQUAL) developed by Ziethaml, Parasuraman, and Berry which divides service quality into five important dimensions: Tangibility, Reliability, Responsiveness, Assurance, and Empathy. Research studies related to marketing factors affecting COVID-19 medication purchasing decisions indicate that Product has the highest influence (35.04%) while Place has the lowest influence (17.95%), reflecting the importance of product quality and accessibility during public health emergencies (Yuduang et al., 2024).

Furthermore, the relationship among the service quality is examined through Structural Equation Modeling analysis (SEM). SEM facilitates the detection of observed and latent variables (e.g., Assurance and Responsiveness) that affect service quality, and helps firms to examine connections and modify their strategies to enhance the effectiveness of their service

and in accordance with customer expectations. Service quality is crucial for customer satisfaction and loyalty. This study examines its impact on Thai logistics and strategies to improve service. For example, airport services during COVID-19 showed that safety measures and effective management boosted passenger satisfaction and travel intention (Prasetyo et al., 2022).

Nevertheless, few studies have investigated Thailand's post-pandemic e-commerce expansion and its impact on logistics service quality expectations, particularly the relationship between SERVQUAL dimensions and 5Ps marketing elements. The present research examines whether service quality factors influence customer satisfaction within Thailand's logistics sector, employing SEM to analyze these theoretical relationships.

Objectives

1. To examine factors affecting the service delivery system of logistics service providers in Thailand.

2. To analyze the logistics service structure in order to identify approaches for creating customer satisfaction among service users.

Materials and methods

1. The Research Approach

This study adopts a quantitative approach using the Structural Equation Modelling (SEM) as a very powerful statistical procedure style. The SEM is employed for investigating and modeling the cause-effect relationships among multiple interlinked latent constructs.

2. Sample Group

Samples are respondents who live in Chonburi province, obtained by convenience sampling. The model consists of eight latent constructs and the sample size is based on (Hair et al. ,2010) that six to ten times the number of latent variables could be considered the lowest acceptable minimum number of respondents to be included in studies. Research Tool: The research tool which has been made use of is a well-designed questionnaire that consists of the following parts. Section 1: Background Information [5 items]. Section 2: Service quality affected by customer trust (5 items), for example, parcel delivery services, drop-off service, door-to-door service, and damage protection policy. Section 3: Service providers' attentiveness and peak service performance (4 items) This construct represents responsiveness to customer complaints and support services. Factor 4: Service provider reliability and its effect for the service quality (4 items) in punctual, responsible, and consistent. Factor 5: The Effect of Service Responsiveness on Service Quality (4 items) This includes staff responsiveness, support, and follow-up on cases (Table5). Section 6: Tangible service quality to overall service quality

(4 items, politeness, efficiency, and consistency). 7: Influence of marketing factors on service quality (4 items; promotions, service location, pricing and personnel professionalism). Dimension 8: Impact of service quality in customer satisfaction (5 items which measure trust, empathy, reliability, responsiveness and tangible dimension). The 35-item questionnaire is rated on a 5-point Likert scale. The Cronbach's alpha coefficient for the instrument was ≥ 0.800-0.900, which showed high reliability of the instrument.

3. Data Collection

Data were collected in Chonburi province through both online and secondary data sources, employing online questionnaires using Google Forms and social media. Five hundred valid questionnaires were collected, which were found to be acceptable for statistical analysis. This research has been passed an ethical approval a research project from research ethics committee of Mapua University FM-RC-22-04 (112141)

4. Analysis of Data

Descriptive statistics i.e., frequency and percentage (in the form of distribution tables) were employed to describe the demographic statuses of the respondents. Univariate, bivariate and testing causal relationship to influence logistic service quality in Thailand in the case among Kerry Express and Flash Express. The research combines dimensions of the service quality (tangibility, reliability, responsiveness, assurance and empathy) and the marketing mix (5Ps), that is Product, Price, Place, Promotion and People. The data collected were processed by IBM SPSS and IBM AMOS 24 via Structural Equation Modeling (SEM).

Results and discussion

1. Chonburi Logistics Service Status

The status of service of service logistics user in Chonburi province can be summarized in Table 1: The status of service of service logistics users in Chonburi province. From the table1 shows that the logistics service providers in Chonburi Province, the majority are man which amount top = 440 people (81.5%) and (n = 540). The majority are 25-34 years old (290; 53.7%). One thousand and twenty-three participants (63%) had monthly incomes of less than 15,000 THB. 1-3A total of 200 (37%) had monthly incomes of less than 15,000 THB. Further, most have experience to utilize the means of transportations in Thailand [480 (88.9%)].

Table 1. showed the number and percentage of the sample group's status (n = 540)

Demographic Characteristics	Type	Sample	Percentage %
Gender	Male	440	81.5%
	Female	88	16.3%
	Not specified	12	2.2%
Age	15-24 years	120	22.2%
	25-34 years	290	53.7%
	35-44 years	85	15.7%
	45-54 years	40	7.4%
	more than 54 years	5	0.9%
Saraly	Lower than 15,000 baht	200	37.0%
	15,001 - 25,000 baht	150	27.8%
	25,001 - 35,000 baht	80	14.8%
	35,001 - 45,000 baht	45	8.3%
	more than 45,000 baht	65	12.0%
Degree's	Primary education	10	1.9%
	Secondary education	70	13.0%
	Bachelor's degree	385	71.3%
	Master's degree	60	11.1%
	Doctoral degree (Ph.D.)	15	2.8%
Experience with Transportation Services in Thailand	Yes	480	88.9%
	No	60	11.1%

2. Factors influencing logistics service usage behavior in Chonburi

The factors influencing the behavior of transportation service usage among users of the logistics service in Chonburi Province were analyzed according to the literature for example, the Service Quality Model (SERVQUAL) and the theory of the Marketing Strategy 5Ps. Using the SEM, the research structure is empirically proposed by the research hypotheses as follows. It is also shown in Figure 2 that the parameter values are specified based on the research hypotheses to facilitate the analysis of the structural equation model within Microsoft Visio. You will notice at this stage no factor loading has been applied to each parameter; so, all parameters are still in place.

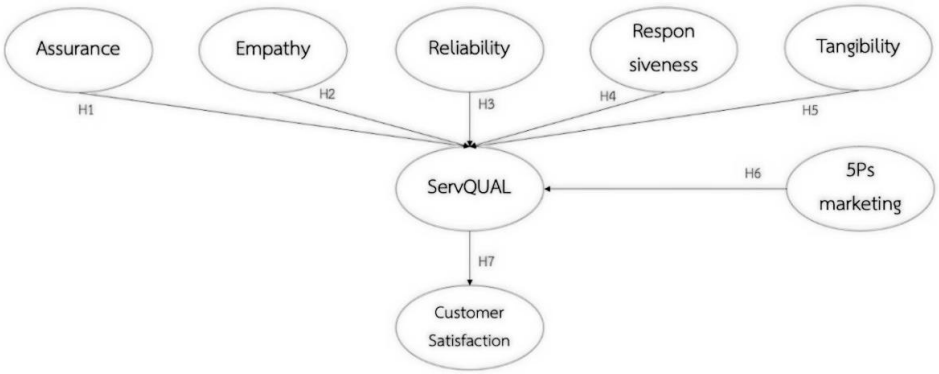

Figure 1. Conceptual Framework

H1: Customer Assurance has a direct impact on service quality
H2: Service provider empathy has a direct impact on service quality
H3: Service provider reliability has a direct impact on service quality
H4: Service provider responsiveness has a direct impact on service quality
H5: The quality of tangibility aspects has a direct impact on service quality
H6: 5Ps marketing factors have a direct impact on service quality
H7: Service quality has a direct impact on customer satisfaction

3. Model Construction

After applying parameter magnitude data to a variety of predictors in the AMOS24 software, it was discovered that the model could not be executed, because of overlapping relationships as shown using the error message "Sample moment matrix is not positive definite." This happened because there were so many values in the R matrix with so little data in each that the correlation matrix is not stable and the program won't run.

The problem was partially alleviated through the identity matrix method, as in Figure3, to test ingredients in the parameters indicating overlapping relationships. After looking at the correlation of each pair of variables, I found that some of the pairs had a correlation greater than 1. And that's not possible. If variables are correlated with each other higher than 1, it may suggest something is wrong in your data

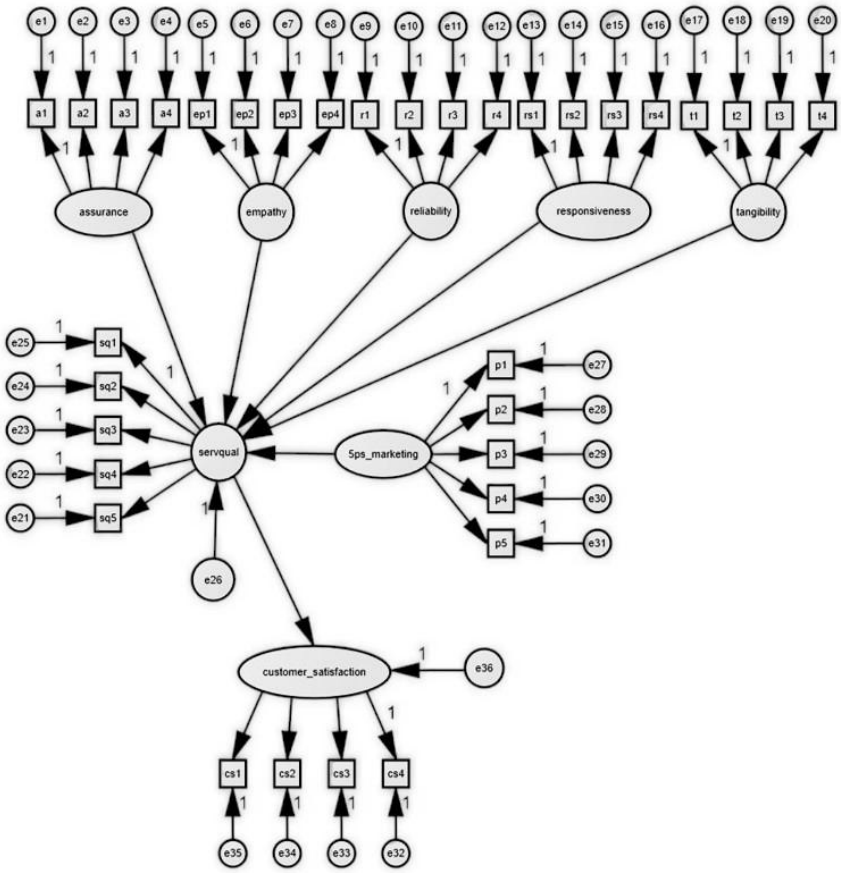

Figure 2. Initial Model

4. The sample covariance matrix in SPSS

The sample covariance matrix is presented in the statistical analysis in order to compute the potential differences in the data and relate them to e.g. means, variances, and correlations. As a qualitatively true fact, this matrix is positive definite, to be precise when used here and there that here and there should be in one of the forms of analysis where it is used shape analysis or structural equation modeling or something. However, if the cross-tab sample

covariance matrix is not positive definite, some problems could be with the data or the method used to analyze it. This could be due to quality problems with the data, errors, outliers or missing data, causing poor estimation of the covariance matrix.

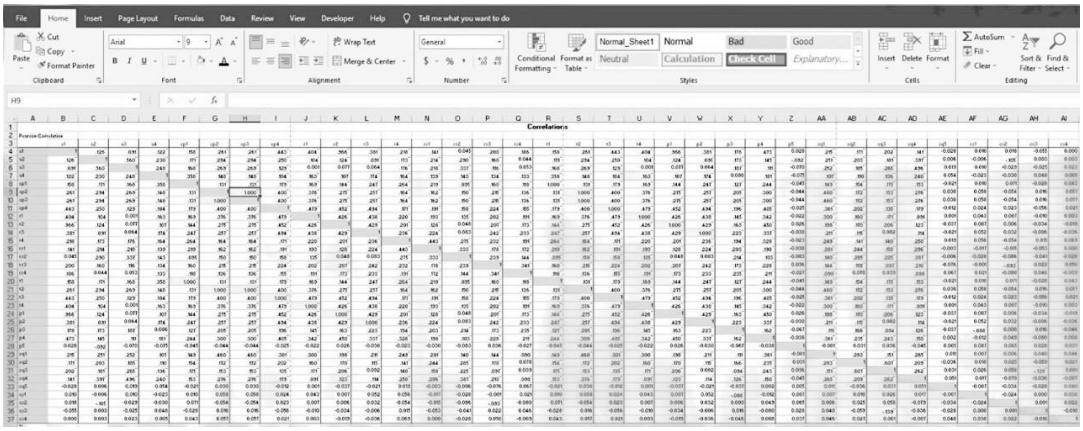

Figure 3. Identity matrix

High multicollinearity among variables can make the covariance matrix non-positive definite and unstable. When the sample size is very small, the estimates may be unreliable, and model mis-specification, i.e. that the model does not adequately describe the data, can also produce a wrong covariance matrix.

The following steps may be considered as figure4: Thoroughly clean the data by detecting and treating errors, outliers, and missing values as appropriate. If multicollinearity is an issue, drop the highly correlated variables or preferably perform a method like PCA to filter out the correlated components. Occasionally, stabilization of the covariance matrix is improved by increasing sample size. Also, you may want to take a look at the statistical model if it is accurately describing the data. Regularization approaches, e.g. using Ridge Regression, can in some cases improve conditions for the covariance matrix.

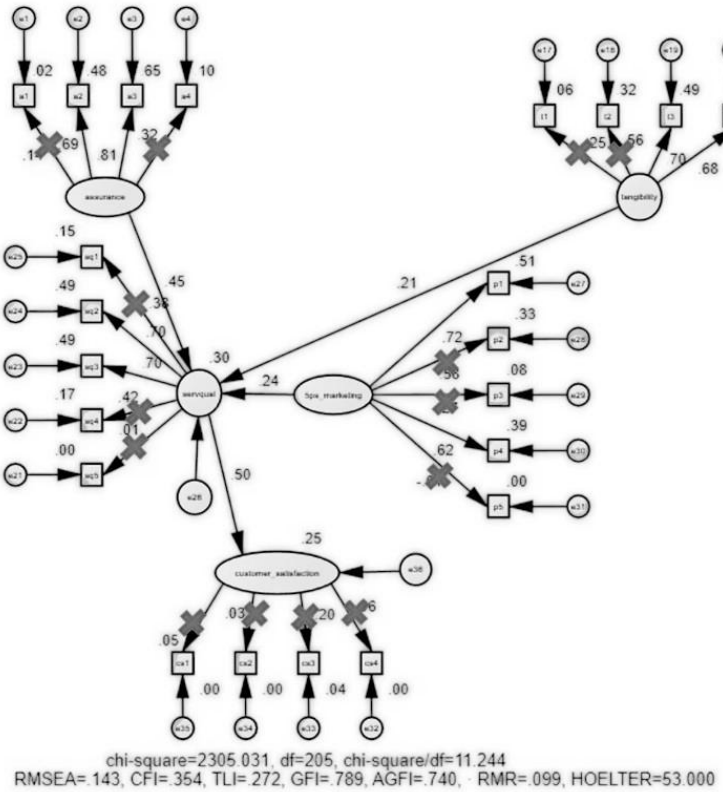

Figure 4. Square multiple correlation

5. Assessment of Structural Model

To evaluate the validity of the structural model (SEM), seven proposed hypotheses were tested. The analysis revealed that while some hypotheses were supported, others did not demonstrate statistically significant relationships. The results of the hypotheses testing are summarized as follows:

H1: Customer Assurance ⟶ Service Quality was supported (the pathway from Assurance to Servqual shows a positive standardized weight of 0.45, indicating a significant direct impact)

H2: Service Provider Empathy ⟶ Service Quality received no support (this model lacks a pathway from Empathy to Service Quality, or no significant values were observed)

H3: Service Provider Reliability ⟶ Service Quality was not supported (no clear connecting pathway between Reliability and Service Quality was found)

H4: Service Provider Responsiveness ⟶ Service Quality lacked support (no significant pathway from Responsiveness to Service Quality was detected)

H5: Tangibility ⟶ Service Quality gained support (the pathway from Tangibility to Servqual displays a positive standardized weight of 0.21, demonstrating clear influence)

H6: 5Ps Marketing ⟶ Service Quality received support (the pathway from 5Ps Marketing to Service Quality shows a positive standardized weight of 0.24, revealing a significant direct impact)

H7: Service Quality ⟶ Customer Satisfaction was supported (the pathway from Servqual to Customer Satisfaction exhibits a positive and significant standardized weight of 0.50)

6. Consistency with Previous Research

The research findings indicate that Customer Assurance has a direct impact on service quality, reflecting that service users are aware of the quality of products and services, as well as reliability. This is a key factor in establishing trust and happy clients, these clients of this company, will return for further services or products from such a company. This supports also findings of research in the studied field of Industry 4.0 where such value for customers in the form of environmental-friendly, sustainable and innovative solutions to meet the responding to the changing customer requirements and improve the competitive position in the digital era (Štverková & Pohludka, 2023).

Physical Evidence: The quality of the tangibles has a direct effect on the service quality, as it is who are to be seen or felt, such as décor, ambience and equipment make an impression on the customer and affect his perception and satisfaction. These are the kind of things that can make a company feel good, and help a user have faith in a service. This is consistent with the findings from the study "Students' perceptions of service quality in Saudi universities: the SERVPERF model" which states that tangibility has a significant positive impact on customer satisfaction (Sohail & Hasan, 2021).

5Ps marketing mix elements have a significant effect on service quality: as the five marketing elements of product, price, place, promotion and people are properly implemented, they will directly influence service quality. This Action contributes to a positive customer experience, customer satisfaction, service-trust and long-term customer loyalty. This is consistent with research on Determinant factors of customer Preferences in buying alcoholic beverage that discusses how the Marketing Mix 5Ps framework allows a company or a product to evaluate and to decide what to change or to develop to satisfy the needs and values of the target market (Yandug et al., 2023).

Service quality has a direct impact on customer satisfaction shows that A key element influencing customer happiness is service effectiveness. This is consistent with research aimed at providing more clarity on the relationship flow path in the life insurance sector by examining the concepts of service quality, customer happiness, and customer loyalty and their relationships. Customer satisfaction is an intervening variable that provides directional influence

as a mediator of the relationship between service quality and customer loyalty, according to the results, which are experimentally supported (Rai & Srivastava, 2013).

7. Practical Implications

These findings carry important implications for Thailand's logistics industry. Customer Assurance emerges as the most influential factor (β = 0.45), suggesting Kerry Express and Flash Express should focus heavily on trust-building mechanisms like comprehensive insurance coverage, transparent tracking systems, and reliable delivery promises. Surprisingly, Empathy, Reliability, and Responsiveness showed no statistical significance, which may reflect Thai consumer preferences for concrete security measures rather than interpersonal service elements or speed-focused approaches. This allows logistics companies to redirect investment from staff empathy training toward more effective quality drivers. These findings carry important implications for Thailand's logistics industry. Customer Assurance emerges as the most influential factor (β = 0.45), suggesting Kerry Express and Flash Express should focus heavily on trust-building mechanisms like comprehensive insurance coverage, transparent tracking systems, and reliable delivery promises. Surprisingly, Empathy, Reliability, and Responsiveness showed no statistical significance, which may reflect Thai consumer preferences for concrete security measures rather than interpersonal service elements or speed-focused approaches. This allows logistics companies to redirect investment from staff empathy training toward more effective quality drivers. Tangibility plays a noticeable role ($\beta = 0.21$) in shaping how customers perceive service quality. Factors such as the condition of delivery vehicles, user-friendliness of mobile apps, and the quality of packaging all contribute, though they are secondary to ensuring customers feel secure. Marketing activities show a similar moderate effect ($\beta = 0.24$); efforts like pricing strategies or promotional campaigns support perceptions of service quality but are not the main driving force. The key takeaway is the strong link between Service Quality and Customer Satisfaction ($\beta = 0.50$). In practice, improving service quality by one unit tends to raise customer satisfaction by roughly half a unit, highlighting that investments aimed at enhancing service actually offer tangible returns for logistics companies operating in Thailand.

Table 2. Showing Various Parameter Values

Variable	Items	λ	λ^2	$1-\lambda^2$	α	CR	AVE
Assurance	a2	0.691	0.477481	0.522519	0.715	0.741521598	0.5651725
	a3	0.808	0.652864	0.347136			
Tangibility	t3	0.702	0.492804	0.507196	0.647	0.731243602	0.476244
	t4	0.678	0.459684	0.540316			
ServQUAL	sq2	0.702	0.492804	0.507196	0.752	0.734061942	0.490004
	sq3	0.698	0.487204	0.512796			
5PS Marketing	p1	0.717	0.514089	0.485911	0.661	0.797950527	0.412547667
	p2	0.577	0.332929	0.667071			
	p4	0.625	0.390625	0.609375			
Customer satisfaction	cs3	0.624	0.389376	0.610624	-0.37	0.669687292	0.383186
	cs4	0.614	0.376996	0.623004			

Conclusion

The study revealed that when it comes to Service Quality, users place the greatest importance on Customer Assurance, followed by Responsiveness, Empathy, and Tangibility. For the 5Ps Marketing Mix, Price stood out as the key factor, since users usually take into account shipping costs, which depend on weight, size, distance, and whether the shipment is insured. Looking at the hypotheses and results:

H1: Customer Assurance has a direct impact on service quality (β = 0.45).

H2: Service provider empathy showed no significant effect.

H3: Service provider reliability showed no significant effect.

H4: Service provider responsiveness showed no significant effect.

H5: Tangibility affects service quality (β = 0.21).

H6: 5Ps Marketing positively influences service quality (β = 0.24).

H7: Service quality has a strong direct effect on Customer Satisfaction (β = 0.50).

In summary, users place the highest importance on trust (Customer Assurance) and value for money (Price), followed by responsiveness, empathy, reliability, and tangibility. These factors influence both the choice of logistics service provider and the likelihood of using the service again.

Recommendation

1. The next experiment should define the research scope more clearly.

2. Future research should also examine users' expectations in greater detail, to provide insights for improving service delivery.

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