The influence of service quality and marketing mix on customer loyalty through the intervening role of customer trust and customer satisfaction in the shipping business in Indonesia

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Abstract: This study examines the influence of service quality and marketing mix on customer loyalty through the mediating roles of customer trust and customer satisfaction in the Indonesian shipping industry. Utilizing a sample of 250 respondents from the Indonesian Shipbuilding and Offshore Industries Association (IPERINDO), the results reveal significant relationships among the variables. Service quality positively affects customer satisfaction (t = 3.595, p < 0.05, β = 0.129), while the marketing mix influences customer trust (t = 8.228, p < 0.05, β = 0.694). The structural model demonstrates strong predictive relevance (Q^2 = 99.4%), explaining 85.3% of the variation in customer loyalty. The findings underscore the importance of implementing consistent service quality and strategic marketing efforts to foster trust and satisfaction, which, in turn, enhance customer loyalty. This research contributes to understanding how customer trust and satisfaction mediate the impacts of service quality and marketing mix on customer loyalty, providing practical insights for the maritime business sector.

Keywords: Customer loyalty, Customer satisfaction, Marketing mix, Mediation analysis, Service quality.

1. Introduction

The Indonesian shipping industry plays a critical role in supporting both national and international trade. As competition in the industry intensifies, shipping companies face increasing pressure to provide reliable and efficient services that meet customer expectations. In this highly competitive environment, achieving and maintaining customer loyalty has become a fundamental challenge and a key determinant of long-term business success.

Customer loyalty is not formed in isolation but is influenced by various factors, including service quality and marketing mix strategies. Service quality, which encompasses dimensions such as reliability, responsiveness, assurance, empathy, and tangibles, directly impacts customers' perceptions and experiences. Meanwhile, an effective marketing mix—including product, price, place, promotion, people, process, and physical evidence—enhances customers' perceived value and satisfaction.

Despite the recognized importance of these factors, customer loyalty cannot be achieved without customer trust and satisfaction acting as intermediaries. Customer trust reflects the confidence customers have in a company's ability to fulfill its promises, while customer satisfaction arises from the extent to which customer expectations are met or exceeded. These two mediators play a critical role in strengthening the relationship between service quality, marketing mix, and customer loyalty.

In the context of the Indonesian shipping industry, factors such as inconsistent service quality, suboptimal marketing strategies, and varying levels of customer trust and satisfaction pose significant challenges to building customer loyalty. Moreover, there is limited research exploring the mediating roles of trust and satisfaction in this industry. Understanding these relationships is vital for shipping companies to develop effective strategies that enhance their competitive advantage and customer retention.

This study aims to address these gaps by examining the influence of service quality and marketing mix on customer loyalty through the mediating roles of customer trust and customer satisfaction. Using a quantitative approach, the research analyzes data collected from key stakeholders in the Indonesian shipping industry. The findings provide valuable insights into the strategic levers that can be employed to foster stronger customer relationships and sustain business growth in a competitive marketplace.

2. Literature Review

2.1. Service Quality

Service quality is defined as the ability of a company to meet and exceed customer expectations, which is crucial in fostering customer loyalty. Berry, et al. [1] introduced the SERVQUAL model, highlighting five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. These dimensions collectively shape customers' perceptions and evaluations of service quality. Research has shown that higher service quality enhances customer satisfaction and trust, leading to increased loyalty [2]. In the shipping industry, reliability, timeliness, and safety are critical aspects of service quality that significantly impact customer perceptions and behaviors.

2.2. Marketing Mix

The marketing mix, often conceptualized as the "4Ps" (product, price, place, and promotion), was first formalized by McCarthy [3] . Later expansions by Booms and Bitner [4] added three more elements: people, process, and physical evidence, creating the "7Ps" framework. These elements collectively enhance perceived value and customer satisfaction. In the shipping industry, strategic application of the marketing mix such as competitive pricing, reliable distribution channels, and effective promotional efforts—plays a pivotal role in meeting customer needs and fostering trust.

2.3. Customer Trust

Customer trust is the confidence customers have in a company's ability to deliver on promises. Morgan and Hunt [5] emphasized trust as a critical component of relationship marketing, facilitating long-term customer retention. Trust mediates the relationship between service quality and loyalty, as well as marketing mix and satisfaction. In the shipping industry, factors like consistent performance, timely delivery, and secure operations strengthen customer trust, which is essential for loyalty in competitive markets.

2.4. Customer Satisfaction

Kotler and Keller [6] defined customer satisfaction as the degree to which a product or service meets or exceeds customer expectations. Satisfaction serves as a key mediator between service quality, marketing mix, and customer loyalty. Satisfied customers are more likely to engage in repeat purchases and recommend services to others. Studies in the maritime sector highlight that satisfaction is influenced by service quality dimensions, pricing strategies, and overall perceived value.

2.5. Customer Loyalty

Customer loyalty is characterized by a customer's commitment to repurchase or recommend a service despite attractive alternatives. Oliver [7] described loyalty as a deep-seated preference for a brand or service, influenced by consistent positive experiences. The role of mediators like trust and satisfaction is critical, as they strengthen the linkage between service quality, marketing strategies, and loyalty outcomes. In the shipping industry, loyalty ensures long-term revenue and competitive advantage.

2.6. Conceptual Framework

The theoretical framework of this study integrates the relationships among service quality, marketing mix, customer trust, customer satisfaction, and loyalty. Prior research demonstrates that service quality and marketing mix have both direct and indirect effects on loyalty, with trust and satisfaction acting as mediating variables [8]. This framework guides the analysis in examining how shipping companies can strategically leverage these elements to enhance customer loyalty in Indonesia.

3. Methodology

3.1. Research Design

This study employs a quantitative research design to investigate the influence of service quality and marketing mix on customer loyalty, with customer trust and customer satisfaction as mediating variables. A survey-based approach was utilized to collect data from respondents within the Indonesian shipping industry. The design focuses on examining causal relationships between variables and validating the proposed conceptual framework through statistical analysis.

3.2. Population and Sample

The population of this study includes customers of shipping companies operating under the Indonesian Shipbuilding and Offshore Industries Association (IPERINDO). A purposive sampling technique was employed to select a representative sample of 250 respondents, ensuring the inclusion of individuals with sufficient experience and engagement in using shipping services. The sample size was determined based on statistical considerations for structural equation modeling (SEM).

3.3. Data Collection

Primary data were collected through a structured questionnaire designed based on validated measurement scales from previous studies. The questionnaire consisted of five sections:

- Service Quality
- Measured using SERVQUAL dimensions [8].
- Marketing Mix
- Assessed using the 7Ps framework [4].
- Customer Trust
- Evaluated based on trust dimensions proposed by Morgan and Hunt [5].
- Customer Satisfaction
- Measured using satisfaction metrics outlined by Kotler and Keller [6].
- Customer Loyalty

Assessed using loyalty scales derived from Oliver [7].

Responses were collected using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

3.4. Data Analysis

The data were analyzed using structural equation modeling (SEM) with the help of statistical software. The analysis process included:

- Descriptive Statistics
  To summarize demographic characteristics of the respondents and key variables.
- Measurement Model Testing
  Conducted using confirmatory factor analysis (CFA) to evaluate the reliability and validity of the constructs.
- Structural Model Testing
  Used to assess the direct and indirect effects among the variables and validate the hypothesized relationships.

3.5. Research Hypotheses

The study tested the following hypotheses:

- Service quality has a significant positive effect on customer loyalty.
- Marketing mix has a significant positive effect on customer loyalty.

- Customer trust mediates the relationship between service quality and customer loyalty.
- Customer satisfaction mediates the relationship between marketing mix and customer loyalty.

3.6. Validity and Reliability

Instrument validity was assessed through content validity (expert review) and construct validity (CFA results). Reliability was measured using Cronbach's Alpha, with a threshold value of 0.7 for acceptable internal consistency.

3.7. Ethical Considerations

The study adhered to ethical research practices, including informed consent, confidentiality of respondent information, and voluntary participation. Respondents were assured that their data would be used solely for academic purposes.

4. Result

4.1. Descriptive Statistics

The study included 250 respondents from the Indonesian Shipbuilding and Offshore Industries Association (IPERINDO). Male respondents accounted for 94% (235 participants), while female respondents comprised 6% (15 participants). The majority of respondents were aged 31–40 years (37.2%), followed by 41–50 years (22.8%).

4.2. Evaluation of the Measurement Model

The reliability and validity of the constructs were confirmed through outer loading values, composite reliability, and average variance extracted (AVE). All outer loading values exceeded the recommended threshold of 0.70, and the composite reliability values for all constructs were above 0.90, indicating strong internal consistency.

4.3. Path Analysis Results: Hypothesis Testing

The results of the path analysis are presented of this study. Hypothesis testing was conducted by examining the significant paths in the structural model. The significant relationships and effects between variables were identified through partial path coefficient testing, using the t-test or by observing the significance levels. The partial test results for the path coefficients in each path, based on the loading values or coefficients from the first analysis run, are illustrated in Figure 1 below:
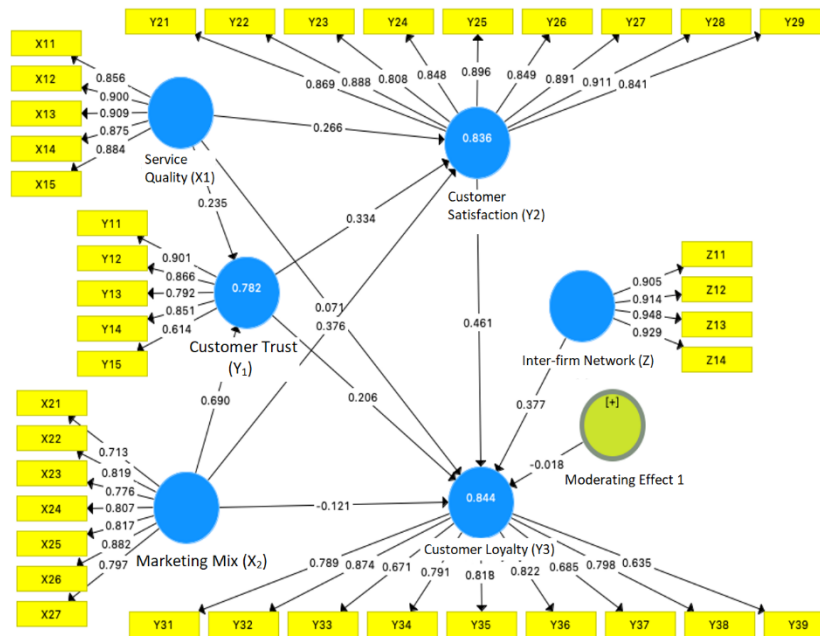
Figure 1.
Structural model of path analysis with loading value of 1st model.

In Figure 1, it is shown that the loading factor values for each indicator should be equal to or greater than 0.70 to ensure that the indicators are valid and can be included in further analysis. The output results in Figure 1 indicate that the loading factor values for Y_{15}, Y_{33}, Y_{37}, and Y_{39} are below 0.70. Therefore, these indicators must be removed from the model.

After removing these indicators, the model was re-analyzed, and the results show that all variable indicators have loading factor values above 0.70. These results are presented in Figure 2 as follows:
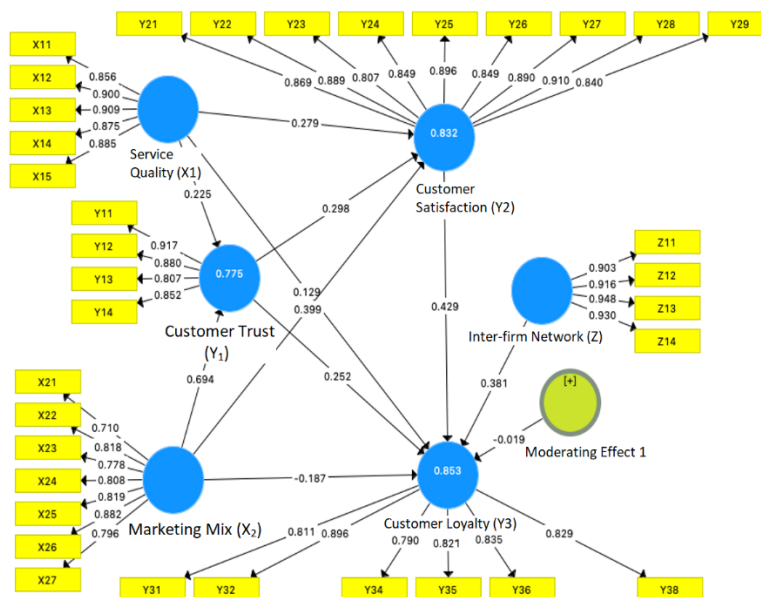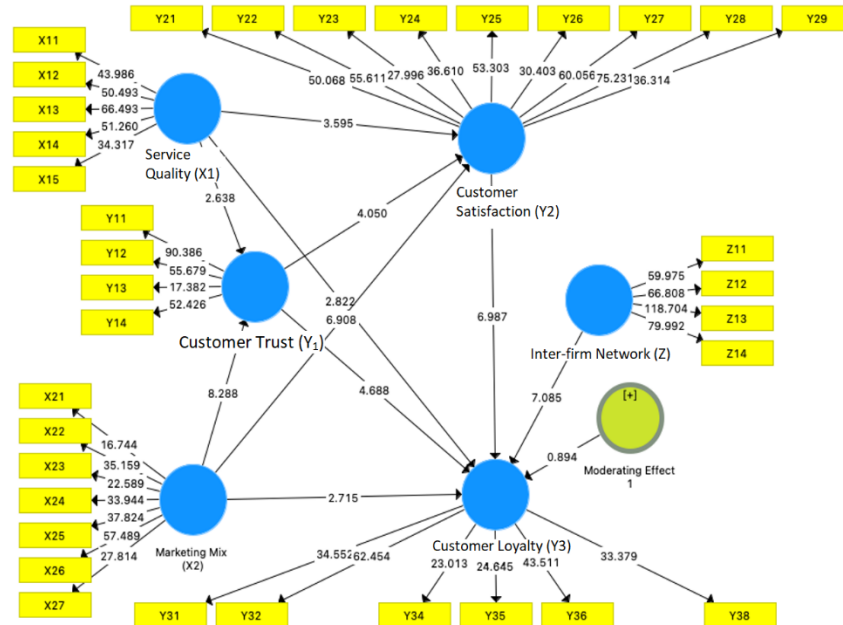

Figure 2.
Path analysis structural model with 2nd model loading value.

The partial test results for the second indicator's loading factor on each path, based on the loading factor values using the algorithm method, indicate that all indicator values are above 0.70 and can proceed to further analysis.

Consequently, a bootstrapping analysis was conducted to determine the significance levels of the relationships among the indicators and variables. The results are presented in Figure 3 as follows:

Figure 3.
Structural Model Path Analysis with Bootstrapping

The displays in Figures 2 and 3 show that the results of the initial analysis carried out are feasible and can be used to support the results of this study.

4.4. Structural Model Analysis

The structural equation modeling (SEM) results provide insights into the relationships among service quality, marketing mix, customer trust, customer satisfaction, and customer loyalty.

4.4.1. Direct Effects

- Service quality significantly influences customer trust ($\beta = 0.225$, $t = 2.638$, $p < 0.05$).
- Marketing mix has a strong positive effect on customer trust ($\beta = 0.694$, $t = 8.288$, $p < 0.05$) and customer satisfaction ($\beta = 0.399$, $t = 6.908$, $p < 0.05$).
- Service quality significantly impacts customer satisfaction ($\beta = 0.279$, $t = 3.595$, $p < 0.05$).
- Customer trust positively affects customer satisfaction ($\beta = 0.298$, $t = 4.050$, $p < 0.05$).
- Both service quality ($\beta = 0.129$, $t = 2.822$, $p < 0.05$) and customer satisfaction ($\beta = 0.429$, $t = 6.987$, $p < 0.05$) directly influence customer loyalty.

Table 1.
Direct influence between variables.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STERR|)	P values
H1: Service Quality (X_1) -> Customer Trust (Y_1)	0.225	0.240	0.085	2.638	0.009
H2: Marketing Mix (X_2) -> Customer Trust (Y_1)	0.694	0.681	0.084	8.288	0.000
H3: Service Quality (X_1) -> Customer Satisfaction (Y_2)	0.279	0.275	0.078	3.595	0.000
H4: Customer Trust (Y_1) -> Customer Satisfaction (Y_2)	0.298	0.299	0.073	4.050	0.000
H5: Marketing Mix (X_2) -> Customer Satisfaction (Y_2)	0.399	0.403	0.058	6.908	0.000
H6: Service Quality (X_1) -> Customer Loyalty (Y_3)	0.129	0.130	0.046	2.822	0.005
H7: Customer Trust (Y_1) -> Customer Loyalty (Y_3)	0.252	0.257	0.054	4.688	0.000
H8: Marketing Mix (X_2) -> Customer Loyalty (Y_3)	-0.187	-0.185	0.069	2.715	0.007
H9: Customer Satisfaction (Y_2) -> Customer Loyalty (Y_3)	0.429	0.420	0.061	6.987	0.000
H10: Inter-firm Network (Z) -> Customer Loyalty (Y3)	0.381	0.384	0.054	7.085	0.000
H11: Moderating Effect 1 -> Customer Loyalty (Y_3)	-0.019	-0.019	0.021	0.894	0.372

4.4.2. Indirect Effects

- Customer trust mediates the relationship between marketing mix and customer loyalty (β = 0.175, t = 4.020, p < 0.05).
- Customer satisfaction mediates the relationship between marketing mix and customer loyalty (β = 0.171, t = 5.102, p < 0.05).

Table 2.
Indirect Effect Through Mediation.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STERR|)	P values
H12: Service Quality (X_1) -> Customer Trust (Y_1) -> Customer Satisfaction (Y_2)	0.067	0.072	0.026	0.153	0.067
H13: Service Quality (X_1) -> Customer Trust (Y_1) -> Customer Loyalty (Y_3)	0.057	0.061	0.019	0.119	0.057
H14: Service Quality (X_1) -> Customer Satisfaction (Y_2) -> Customer Loyalty (Y_3)	0.120	0.114	0.040	0.173	0.120
H15: Customer Trust (Y_1) -> Customer Satisfaction (Y_2) -> Customer Loyalty (Y_3)	0.128	0.127	0.057	0.214	0.128
H16: Marketing Mix _(X2) -> Customer Trust_(Y1) -> Customer Satisfaction_(Y2)	0.207	0.204	0.057	3.617	0.000
H17: Marketing Mix (X_2) -> Customer Satisfaction (Y_2) -> Customer Loyalty (Y_3)	0.171	0.169	0.034	5.102	0.000
H18: Marketing Mix (X_2) -> Customer Trust (Y_1) -> Customer Loyalty (Y_3)	0.175	0.175	0.044	4.020	0.000
H19: Service Quality _(X_1) -> Customer Trust (Y_1) -> Customer Satisfaction (Y_2) -> Customer Loyalty (Y_3)	0.029	0.030	0.015	1.867	0.063
H20: Marketing Mix _(X2) -> Customer Trust_(Y1) -> Customer Satisfaction_(Y2) -> Customer Loyalty_(Y3)	0.089	0.087	0.031	2.834	0.005

4.5. Model Fit and Predictive Relevance

The R^2 values for customer loyalty, customer satisfaction, and customer trust were 0.853, 0.832, and 0.775, respectively, indicating that 85.3% of the variance in customer loyalty is explained by the model. The predictive relevance (Q^2) value of 0.994 confirms that the model has strong predictive relevance

Table 3.
Distribution of Lecturers at Private Universities in East Kalimantan by Gender.

No	Independent Variable	Moderator Variable	Mediator Variable 1	Mediator Variable 2	Dependent Variable	Coefficient Value	Direct Effect (t statistic) (1,96)	Indirect Effect (t statistic) (1,96)	P Values (α = 0,05)	Desc
1	Service Quality		Customer Trust			0,225	2,638		0,009	S
2	Marketing Mix		Customer Trust			0,694	8,288		0,000	S
3	Service Quality			Customer Satisfaction		0,279	3,595		0,000	S
4			Customer Trust	Customer Satisfaction		0,298	4,050		0,000	S
5	Marketing Mix			Customer Satisfaction		0,399	6,908		0,000	S
6	Service Quality				Customer Loyalty	0,129	2,822		0,005	S
7			Customer Trust		Customer Loyalty	0,252	4,688		0,000	S
8	Marketing Mix				Customer Loyalty	-0,187	2,715		0,007	S
9				Customer Satisfaction	Customer Loyalty	0,429	6,987		0,000	S
10		Inter-firm Network			Customer Loyalty	0,381	7,085		0,000	S
11		Inter-firm Network		Customer Satisfaction	Customer Loyalty	-0,019	0,894		0,372	TS
12	Service Quality		Customer Trust	Customer Satisfaction		0,067		0,153	0,067	TS
13	Service Quality		Customer Trust		Customer Loyalty	0,057		0,119	0,057	TS
14	Service Quality			Customer Satisfaction	Customer Loyalty	0,120		0,173	0,120	TS
15			Customer Trust	Customer Satisfaction	Customer Loyalty	0.128		0.214	0,128	TS
16	Marketing Mix		Customer Trust	Customer Satisfaction		0,207		3,617	0,000	S
17	Marketing Mix			Customer Satisfaction	Customer Loyalty	0,171		5,102	0,000	S
18	Marketing Mix		Customer Trust		Customer Loyalty	0,175		4,020	0,000	S
19	Service Quality		Customer Trust	Customer Satisfaction	Customer Loyalty	0,029		1,867	0,063	TS
20	Marketing Mix		Customer Trust	Customer Satisfaction	Customer Loyalty	0,089		2,834	0,005	S

4.6. Summary of Hypothesis Testing

Out of the 20 hypotheses tested, most were supported, demonstrating significant direct and indirect relationships among the variables. Notably, the mediating roles of customer trust and customer satisfaction were confirmed, highlighting their importance in linking service quality and marketing mix to customer loyalty.

5. Discussion

The findings of this study provide valuable insights into the dynamics of service quality, marketing mix, customer trust, customer satisfaction, and customer loyalty within the Indonesian shipping industry. The discussion integrates the empirical results with existing literature and highlights the theoretical and practical implications.

5.1. Impact of Service Quality on Customer Trust and Loyalty

The significant positive effect of service quality on customer trust ($\beta = 0.225$, $p < 0.05$) and loyalty ($\beta = 0.129$, $p < 0.05$) aligns with previous studies (Parasuraman et al., 1988; Zeithaml et al., 2000). Reliable service delivery, responsiveness, and assurance have proven critical in building trust among customers. This finding emphasizes that shipping companies must consistently meet customer expectations to enhance trust and foster loyalty. In practice, this could mean ensuring timely deliveries, maintaining safety standards, and improving communication with customers.

5.2. Role of the Marketing Mix in Enhancing Satisfaction and Loyalty

The results confirm that the marketing mix significantly impacts customer satisfaction ($\beta = 0.399$, $p < 0.05$) and loyalty ($\beta = 0.175$, $p < 0.05$). This aligns with the 7Ps framework proposed by Booms and Bitner [4] demonstrating that an optimized mix of product offerings, competitive pricing, and effective promotions contributes to perceived value and satisfaction. Shipping companies should leverage this by offering customized solutions, transparent pricing policies, and strategic promotional campaigns.

5.3. Mediating Role of Customer Trust and Satisfaction

Customer trust and satisfaction emerged as critical mediators in the relationships between service quality, marketing mix, and customer loyalty. Trust significantly mediates the impact of service quality and marketing mix on loyalty (indirect effect $\beta = 0.175$, $p < 0.05$), while satisfaction plays a similar role (indirect effect $\beta = 0.171$, $p < 0.05$). These findings highlight the importance of fostering trust and satisfaction as intermediary steps toward building loyalty. In the shipping industry, this could involve creating a customer-centric approach that prioritizes transparency, reliability, and value creation.

5.4. Theoretical Implications

This study contributes to the literature by integrating the concepts of service quality, marketing mix, customer trust, and customer satisfaction within the context of the Indonesian shipping industry. It confirms the mediating roles of trust and satisfaction, adding to the understanding of how these variables interact to influence loyalty. The findings support the theoretical frameworks of SERVQUAL and the 7Ps, reinforcing their applicability in service industries.

5.5. Practical Implications

For practitioners, the study provides actionable insights into improving customer loyalty:
- Invest in Service Quality
  Consistent and reliable service should be a top priority to build trust.
- Optimize Marketing Mix
  Tailored solutions, competitive pricing, and strategic promotions can enhance customer satisfaction.
- Focus on Relationship Management

Building trust and satisfaction through transparent communication and personalized service will lead to long-term loyalty.

5.6. Limitations and Future Research

While the study offers significant insights, several limitations should be acknowledged. First, the sample is limited to shipping companies within Indonesia, which may affect the generalizability of the findings. Future research could explore other industries or expand the sample to include international contexts. Additionally, incorporating qualitative methods could provide deeper insights into customer perceptions and behaviors.

6. Conclusion

This study investigates the influence of service quality and marketing mix on customer loyalty, with customer trust and customer satisfaction as mediating variables, in the Indonesian shipping industry. The findings provide several significant insights:

- Direct Effects:
  Service quality and marketing mix both have significant direct effects on customer loyalty. High-quality services, characterized by reliability, responsiveness, and assurance, enhance trust and loyalty. Similarly, an effective marketing mix, including competitive pricing, tailored product offerings, and strategic promotions, positively influences satisfaction and loyalty.
- Mediating Roles of Trust and Satisfaction:
  Customer trust and satisfaction are pivotal mediators in the relationships between service quality, marketing mix, and customer loyalty. Trust serves as the foundation for long-term customer relationships, while satisfaction ensures continued engagement and positive recommendations.
- Theoretical Contributions:
  This study reinforces existing theories such as SERVQUAL and the 7Ps framework, confirming their relevance in the shipping industry. It also extends the literature by demonstrating how trust and satisfaction mediate the effects of service quality and marketing mix on loyalty.
- Practical Implications:
  Shipping companies can enhance customer loyalty by focusing on consistent service quality and optimizing their marketing strategies. Building customer trust and satisfaction through transparent communication, reliable services, and value-driven marketing efforts are essential for sustaining competitive advantage.
- Recommendations for Future Research
  While this study offers valuable contributions, future research could expand the scope to include other industries or regions to validate the findings further. Additionally, qualitative approaches could provide richer insights into customer perceptions and preferences.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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