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The Mechanism of Forming Corporate Customer Loyalty in Business-to-Business Relationships: A Study of Shipping Companies in Indonesia

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Abstract: The shipping industry is a capital-intensive business-to-business (B2B) industry characterized by high operational risk and strong dependence on long-term relationships with corporate customers. This study aims to analyse the mechanism of customer loyalty formation in Indonesian shipping companies through the influence of commitment, trust, and relative dependence, both directly and indirectly through customer satisfaction as a mediating variable. The study tested 10 research hypotheses using a quantitative approach through an online cross-sectional survey and Partial Least Square Structural Equation Modelling (PLS-SEM) analysis. Data were collected from 100 corporate customers of shipping companies in Indonesia selected using purposive sampling, with respondents consisting of companies that had experience in business-to-business (B2B) relationships with shipping companies. The results showed that 7 hypotheses were supported, indicating that commitment, trust, and relative dependence positively affect customer satisfaction, while customer satisfaction positively affects customer loyalty. In addition, commitment and relative dependence were found to have direct effects on customer loyalty, whereas trust did not have a direct effect on customer loyalty. In terms of indirect effects, customer satisfaction only mediated the relationship between trust and customer loyalty but did not mediate the relationships between commitment and relative dependence toward customer loyalty. These findings indicate that customer loyalty in the B2B shipping industry is not only formed through customer satisfaction, but also through relational commitment and structural dependence developed within long-term business relationships.

Keyword: Customer Loyalty, B2B Relationships, Shipping Industry, Customer Satisfaction, PLS-SEM.

INTRODUCTION

The shipping industry plays a central role in supporting the smooth operation of Indonesia's national supply chain. As the world's largest archipelagic nation, Indonesia's more than 17.000 islands are connected by sea routes, serving as the backbone of the distribution of goods, raw materials, and resources between regions. The shipping industry's strategic role is

evident not only in domestic logistics but also in supporting Indonesia's exports and imports and integration into global supply chains (Aritonang et al., 2025).

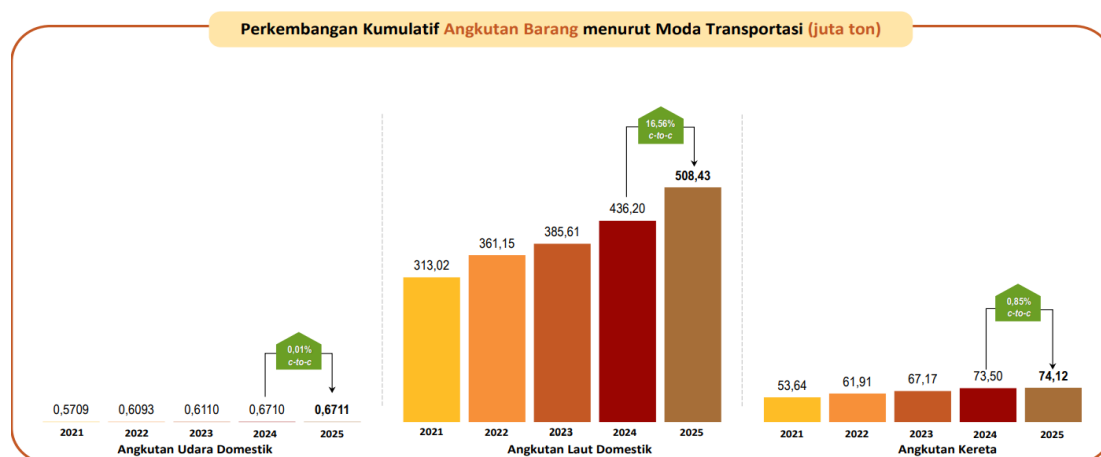
Statistics Indonesia (BPS) data from November 2025 shows that the Gross Domestic Product (GDP) of the transportation and warehousing sector consistently recorded high growth rates, with cumulative (c-to-c) growth of around 9.01% in the first quarter of 2025, 8.75% in the second quarter, and 8.71% in the third quarter, which is above the national GDP growth average. This performance places the transportation and warehousing sector as one of the fastest-growing sectors in Indonesia.

Table 1. Gross Domestic Product Growth Rate Data for 2020

GDP Field Business (Series (2010))	Rate Growth GDP Series 2010 (Percent)				
	Rate Growth Cumulative (c-to- c)				
	2025				
	Quarterly I	Quarterly II	Quarterly III	Quarterly IV	Annual
A. Agriculture, Forestry, And Fishery	10.52	5.62	5.37	-	-
B. Mining And Excavation	- 1.23	0.38	- 0.43	-	-
C. Industry Processing	4.55	5.12	5.26	-	-
D. Procurement Electricity And Gas	5.11	2.99	2.95	-	-
E. Procurement Water, Management Rubbish, Waste and Cycle Repeat	0.18	0.5	1.43	-	-
F. Construction	2.18	3.57	3.79	-	-
G. Trading Big And Retail; Repair Car And Bicycle Motor	5.03	5.2	5.3	-	-
H. Transportation And Warehousing	9.01	8.75	8.71	-	-
I. Provision Accommodation and Eat Drink	5.75	6.92	7.43	-	-
J. Information And Communication	7.72	7.82	8.44	-	-
K. Service Finance And Insurance	3.98	3.59	2.65	-	-
L. Real Estate	2.94	3.32	3.54	-	-
M, N. Corporate Services	9.27	9.29	9.51	-	-
O. Administration Government, Defense And Guarantee Social Must	4.79	4.74	4.62	-	-
P. Educational Services	5.04	3.16	5.58	-	-
Q. Service Health And Activity Social	5.78	4.76	5.47	-	-
R,S,T,U. Service other	9.84	10.59	10.37	-	-
C. Domestic Products Gross	4.87	4.99	5.01	-	-

Source: Central Statistics Agency (2025)

Furthermore, by type of transport, domestic maritime transport experienced significant cumulative growth in the volume of freight transport, from approximately 313 million tons in 2021 to over 508 million tons in 2025, with a relatively high annual growth rate compared to other modes of transport (Badan Pusat Statistik, 2026). This fact confirms that maritime transport is the backbone of national goods distribution, making the sustainable performance of shipping companies crucial for the Indonesian economy and supply chain.



Source: Central Statistics Agency (2026)

Figure 1. Freight Transport Data by Mode of Transport (million Tons)

Unlike many other service sectors, shipping companies operate in a highly capital-intensive environment that requires substantial investments in fleets, maintenance, operational financing, and compliance with safety and environmental regulations (Negkakis, 2025; Wei, 2025; Humaerah & Mokodompit, 2026). Consequently, sustainable business performance depends not only on freight revenues but also on optimal fleet utilization, operational efficiency, and the ability to maintain long-term relationships with corporate customers (Lau et al., 2025; Bang et al., 2012; Salman, 2025; Yan et al., 2024). Regardless of vessel type, shipping companies share similar operational characteristics that emphasize fleet utilization, cost efficiency, regulatory compliance, and relationship continuity, all of which directly influence overall business performance (P. Zhang & Tang, 2021; Caliskan & Esmer, 2020).

In business-to-business (B2B) markets, shipping companies act as strategic logistics partners for mining, energy, manufacturing, and logistics firms rather than merely transportation service providers (Shinohara et al., 2018). Since corporate customers frequently maintain relationships with multiple shipping companies to reduce operational risks and improve supply chain flexibility (Raj et al., 2025; Dimou, 2021), customer loyalty should be understood as a long-term relational commitment rather than exclusive dependence on a single provider. Consequently, maintaining customer loyalty through service quality, operational reliability, and relationship management has become increasingly important in today's competitive shipping industry (Balci et al., 2019; Tran et al., 2021; Ortega & Gevero, 2024; Hartanto et al., 2019; Kalla et al., 2017; Fanam et al., 2016; Wang, 2024; Jang et al., 2013).

Furthermore, in practice, corporate customers in the shipping industry generally do not rely on a single service provider but instead establish relationships with multiple shipping companies simultaneously. This is done as a strategy to manage operational risk, increase flexibility, and optimize logistics costs (Raj et al., 2025 ; Dimou, 2021). Therefore, the phenomenon of customer loyalty in the shipping industry cannot be understood simply as an exclusive relationship between one company and one customer, but rather as part of a more complex multi-firm relationship dynamic (Jang et al., 2013) . In line with these conditions, this study examines the phenomenon of customer loyalty in the context of several shipping companies in Indonesia.

Within these complex B2B relationships, previous studies consistently identify commitment, trust, and relative dependence as key relational determinants of customer loyalty, while customer satisfaction is widely recognized as an important mediating mechanism linking these factors with loyalty (Arthur et al., 2024). Nevertheless, prior

findings remain inconclusive. Some studies argue that customer satisfaction fully mediates the relationship between relational factors and loyalty, whereas others report that commitment and relative dependence may directly influence long-term relationship continuity without relying on customer satisfaction (Amoako et al., 2020). This inconsistency suggests that the mechanism through which customer loyalty is formed remains an open empirical issue.

This difference in findings indicates that in certain B2B relationships, structural dependence and long-term commitment can encourage relationship sustainability even though the level of satisfaction is not yet fully dominant. Furthermore, customer structural characteristics such as company size and length of business relationship (years of B2B relationship) are also suspected to act as control variables that directly or indirectly influence loyalty. Thus, there is still empirical debate about whether B2B customer loyalty is formed through satisfaction mechanisms (full mediation) or also through the direct influence of certain relational factors (partial mediation).

This research gap becomes even more relevant when related to the shipping industry, which has different characteristics than the manufacturing sector. The shipping industry is a highly capital-intensive, high-risk business, with high switching costs and asset specificity (Sigalas, 2025 ; Albertijn et al., 2011 ; Zhang & Yin, 2021 ; Wiedmer et al., 2024) . In this context, customer trust in shipping companies and relational commitment can directly influence loyalty, regardless of short-term satisfaction levels (Balci et al., 2019 ; Andy & Dahlan, 2023 ; Ortega & Gevero, 2024) . At the same time, customer satisfaction remains an important indicator of the quality of ongoing business relationship exchanges (Yorulmaz & Taş, 2022 ; Lin et al., 2023) .

Unlike other B2B industries such as manufacturing, wholesale distribution, or professional services, customer loyalty in the shipping industry is shaped not only by relational quality and customer satisfaction but also by operational dependency and asset-specific constraints. Shipping services are characterized by high capital intensity, limited fleet availability, strict scheduling requirements, cargo safety considerations, and substantial switching costs. Consequently, customers often face significant operational and financial risks when changing service providers. In this context, loyalty may emerge not merely from positive evaluations of service performance, but also from the need to maintain continuity of logistics operations, secure fleet capacity, and avoid disruptions in supply chain activities. These characteristics suggest that the mechanisms underlying customer loyalty in the shipping industry differ from those commonly observed in other B2B settings, where customer satisfaction and trust are often assumed to be the primary drivers of loyalty.

In addition to relational factors, B2B customer loyalty in the shipping industry is also influenced by the structural characteristics of customers, such as firm size and length of business relationship (Justavino-Castillo et al., 2023) . Large-scale customers and long-term relationships tend to have higher operational dependencies, so the decision to maintain or terminate a business relationship has significant strategic implications for both parties (Jiang et al., 2020 ; Nowińska & Schramm, 2021 ; Besson, 2018 ; Williams et al., 2023) . However, these variables are rarely integrated simultaneously in B2B loyalty models based on Social Exchange Theory (Arthur et al., 2024) .

Based on the above description, several research gaps need to be addressed. First, there is still empirical debate regarding the mechanisms of B2B customer loyalty formation, particularly regarding whether customer satisfaction acts as a full mediator or only a partial mediator. Second, most previous research has been conducted in the context of the manufacturing industry, resulting in limited understanding of loyalty mechanisms in the shipping industry, which is characterized by capital-intensive, high-risk, and high levels of operational interdependence. Furthermore, previous research has examined B2B relationships

within a single-firm context, thus failing to fully explain the loyalty phenomenon at the industry level.

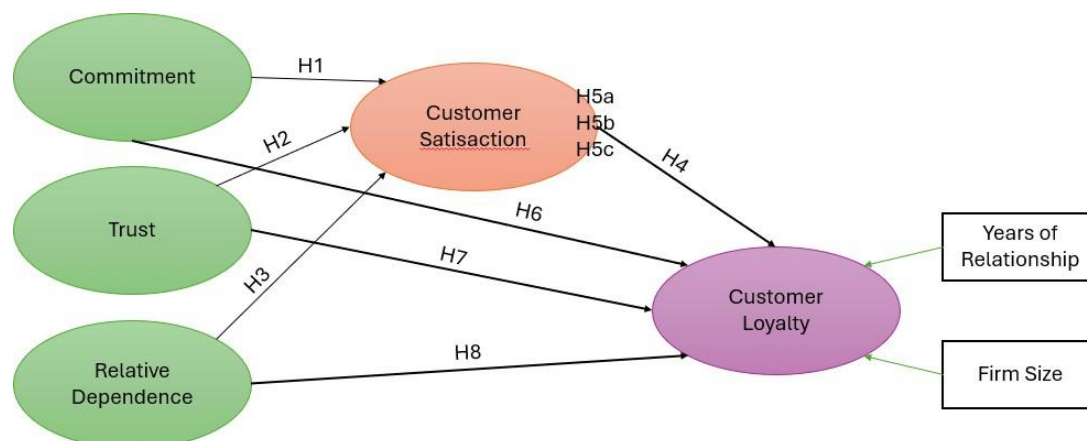
This study offers a novel contribution by extending the customer loyalty literature from conventional B2B contexts to the shipping industry, which possesses unique operational and relational characteristics. While previous studies have primarily examined loyalty mechanisms in manufacturing and general industrial markets, this research investigates whether commitment, trust, and relative dependence operate differently in a highly capital-intensive and operationally interdependent environment. Furthermore, the study simultaneously examines the direct and indirect roles of these relational factors through customer satisfaction while incorporating structural characteristics of business customers. By doing so, this research provides a more industry-specific understanding of how customer loyalty is formed in the shipping sector and contributes to refining existing relationship marketing and social exchange perspectives in B2B settings.

Therefore, research is needed that is able to integrate relational factors, satisfaction mediation mechanisms, and customer structural characteristics in the broader context of the shipping industry, in order to provide a more comprehensive understanding of the formation of B2B customer loyalty in shipping companies in Indonesia.

METHOD

The approach used in this study is a quantitative approach with a deductive nature. The quantitative approach was chosen because this study aims to examine the causal relationship between variables, namely *trust*, *commitment*, *relative dependence*, *customer satisfaction*, and *customer loyalty*, which are measured through observed indicators and analyzed using statistical techniques. advanced. Based on time dimension, research This This study used a *cross-sectional design*, where data collection was conducted over a specific time period to capture the state of B2B relationships at the time the research was conducted (Neuman, 2014). The research instrument was a structured questionnaire adapted from Arthur et al. (2024) and adapted to the context of the B2B shipping industry in Indonesia. Data were collected online from respondents who met the research criteria, with measurements of the variables *commitment*, *trust*, *relative dependence*, *customer satisfaction*, and *customer Loyalty* was measured using a seven-point Likert scale. This study employed a purposive sampling technique, with respondents having experience in B2B business relationships with shipping companies. A total of 100 respondents were used in this study, which was deemed sufficient for PLS-SEM analysis based on the recommendations of Hair et al. (2021) regarding the minimum sample size for predictive and exploratory research.

Data were analyzed using the PLS-SEM approach through SmartPLS. Data analysis was conducted using SmartPLS with the wording test and main test stages. The wording test was used to ensure the clarity and appropriateness of the questionnaire items, while in the main test, the analysis included descriptive statistics, outer model evaluation (convergent validity, discriminant validity, and reliability), inner model evaluation (path coefficient, R^2 , f^2 , Q^2 , and bootstrapping), and testing the mediating effect of customer satisfaction and the influence of control variables firm size and years of B2B relationship on customer loyalty using the PLS-SEM approach (Hair et al. , 2021) .



Source: Adapted from Arthur et al. (2024) and Amoako et al. (2020)

Figure 2. Research Model

RESULT AND DISCUSSION

The survey was conducted with 146 respondents, with 139 data points meeting the screening criteria and used in the analysis. Respondents were involved in decision-making and managing operational partnerships with shipping companies in Indonesia.

Table 2. Descriptive Analysis Results

Variables	Indicator	Min value	Max value	Mean	Grand Mean	Standard deviation
Commitment	C1	3.000	7.000	5.964	5,831	0.955
	C2	4.000	7.000	5.842		0.892
	C3	4.000	7.000	5.604		1.001
	C4	4.000	7.000	5.914		0.941
Trust	T1	3.000	7.000	5.799	5,819	0.915
	T2	3.000	7.000	5.791		0.963
	T3	1.000	7.000	5.669		0.999
	T4	4.000	7.000	5.950		0.900
	T5	3.000	7.000	5.784		0.973
	T6	4.000	7.000	5.921		0.857
Relative Dependence	RD1	3.000	7.000	5.201	5,115	1.213
	RD2	2.000	7.000	4.849		1.162
	RD3	2.000	7.000	5.439		1.060
	RD4	2.000	7.000	4.971		1.163
Customer Satisfaction	CS1	3.000	7.000	5.835	5,842	0.926
	CS2	3.000	7.000	5.892		0.862
	CS3	2.000	7.000	5.799		0.990
	CS4	3.000	7.000	5.842		0.939
Customer Loyalty	CL1	3.000	7.000	5.878	5,662	0.948
	CL2	2.000	7.000	5.561		0.975
	CL3	3.000	7.000	5.338		1.103
	CL4	2.000	7.000	5.734		1.063
	CL5	3.000	7.000	5.799		0.961
Years of Relation	Y	1.000	4.000	2,317	2,317	1,169
Firm Size	FS1	1,000	3,000	2,583	2,731	0,645
	FS2	1,000	4,000	3,137		1,088
	FS3	1,000	3,000	2,504		0,753

Source: Processed by researchers with SmartPLS (2026)

The descriptive analysis results show that respondents gave a relatively high rating to all research constructs. The grand mean values for the commitment, trust, customer satisfaction, and customer loyalty variables ranged from 5.6 to 5.8 on a 7-point Likert scale, indicating a positive perception of the quality of business relationships with shipping

companies in Indonesia. Meanwhile, the relative dependence variable had a relatively lower mean value compared to other constructs, indicating that customers still have alternative service providers in a competitive industry. Overall, the relatively low standard deviation value indicates that respondents' answers tended to be homogeneous and consistent in representing their perceptions of B2B cooperation relationships with shipping companies in Indonesia, thus the data was deemed suitable for further analysis using the PLS-SEM method.

Measurement model analysis (outer model) was conducted to evaluate the ability of indicators to represent the latent constructs in this study. All constructs were treated as reflective constructs, so the outer model was evaluated through convergent validity, discriminant validity, and reliability tests before the structural model (inner model) was further analyzed (Hair et al. , 2021) . Based on the results, processing data use SmartPLS 4, obtained mark *outer loading* And AVE for each indicator is as follows:

Table 3. Results of Convergent Validity Values

Variables	Indicator	Outer Loadings	AVE
Commitment	C1	0.909	0.799
	C2	0.874	
	C3	0.861	
	C4	0.931	
Trust	T1	0.872	0.789
	T2	0.932	
	T3	0.811	
	T4	0.909	
	T5	0.914	
	T6	0.884	
Relative Dependence	RD1	0.860	0.735
	RD2	0.851	
	RD3	0.851	
	RD4	0.867	
Customer Satisfaction	CS1	0.920	0.809
	CS2	0.828	
	CS3	0.924	
	CS4	0.921	
Customer Loyalty	CL1	0.819	0.745
	CL2	0.844	
	CL3	0.858	
	CL4	0.869	
	CL5	0.922	
Years	Y	Single Item Construct	
Firm Size	FS1	0.745	0.698
	FS2	0.893	
	FS3	0.861	

Source: Processed by researchers with SmartPLS (2026)

The measurement model met all recommended criteria. Outer loading values exceeded 0.70, AVE values were above 0.50, Cronbach's Alpha and Composite Reliability exceeded 0.70, while HTMT, Fornell-Larcker, and cross-loading assessments confirmed satisfactory discriminant validity.

Then, the structural model was evaluated using the coefficient of determination or R^2 value. The research results show the following:

Table 4. Results of the Determination Coefficient Value

	<i>R-square</i>	<i>R-square adjusted</i>
Customer Loyalty	0.760	0.749
Customer Satisfaction	0.814	0.810

Source: Processed by researchers with SmartPLS (2026)

Collinearity assessment indicated no serious multicollinearity issues. The structural model demonstrated substantial explanatory power, with R^2 values of 0.814 for customer satisfaction and 0.760 for customer loyalty. Effect size analysis showed that trust had the strongest effect on customer satisfaction, whereas relative dependence exerted the strongest influence on customer loyalty. Predictive relevance assessment also confirmed that the model possessed satisfactory predictive capability.

Table 5. Results of Path Coefficients of Direct Influence Analysis

	Hypothesis	Path Coefficient	T- statistics	P-Values	Conclusion
H1	<i>Commitment</i> has a positive effect on <i>customer satisfaction</i>	0.171	1,710	0.044	Accepted
H2	<i>Trust</i> has a positive effect on <i>customer satisfaction</i>	0.663	9,149	0.000	Accepted
H3	<i>Relative dependence</i> has a positive effect on <i>customer satisfaction</i>	0.139	2,230	0.013	Accepted
H4	<i>Customer satisfaction</i> has a positive effect on <i>customer loyalty</i>	0.385	2,538	0.006	Accepted
H6	<i>Commitment</i> has a positive effect on <i>customer loyalty</i>	0.182	1,782	0.037	Accepted
H7	<i>Trust</i> has a positive effect on <i>customer loyalty</i>	0.027	0.190	0.425	Rejected
H8	<i>Relative dependence</i> has a positive effect on <i>customer loyalty</i>	0.362	4,950	0.000	Accepted
	<i>Years</i> towards <i>customer loyalty</i>	0.072	1,385	0.083	Rejected
	<i>Firm size</i> on <i>customer loyalty</i>	0.044	0.790	0.215	Rejected

Source: Processed by researchers with SmartPLS (2026)

Based on the test results, commitment ($\beta = 0.171$; $p = 0.044$), trust ($\beta = 0.663$; $p < 0.001$), and relative dependence ($\beta = 0.139$; $p = 0.013$) have a significant positive effect on customer satisfaction, with trust showing the strongest influence. Customer satisfaction also has a significant positive effect on customer loyalty ($\beta = 0.385$; $p = 0.006$). In addition, commitment ($\beta = 0.182$; $p = 0.037$) and relative dependence ($\beta = 0.362$; $p < 0.001$) have a significant positive effect on customer loyalty, while trust has no significant effect ($\beta = 0.027$; $p = 0.425$). These results indicate that customer satisfaction plays an important mediating mechanism in the relationship between trust and customer loyalty and supports the formation of customer loyalty in B2B relationships in the shipping industry.

Then, an indirect effect analysis was conducted to evaluate the role of the mediating variable in explaining the relationship between the independent and dependent variables in the research model. The research results are as follows:

Table 6. Results of Path Coefficients of Indirect Influence Analysis

	Hypothesis	Path Coefficient	T- statistics	P- Values	Conclusion
H5a	<i>Customer satisfaction</i> acts as a mediating variable in the relationship between <i>commitment</i> and <i>customer loyalty</i>	0.066	1,477	0.070	Rejected
H5b	<i>Customer satisfaction</i> plays a role as a mediating variable in the relationship between <i>trust</i> and <i>customer loyalty</i>	0.255	2,387	0.009	Accepted
H5c	<i>Customer satisfaction</i> plays a role as a mediating variable in the relationship between <i>relative dependence</i> and <i>customer loyalty</i>	0.053	1,446	0.074	Rejected

Source: Processed by researchers with SmartPLS (2026)

Based on the results of the indirect effect test, customer satisfaction was only proven to mediate the relationship between trust and customer loyalty ($\beta = 0.255$; $p = 0.009$), thus acting as a full mediation. This finding indicates that trust increases customer loyalty through increased customer satisfaction, not through a direct influence. Conversely, customer satisfaction was not proven to mediate the relationship between commitment and customer loyalty ($\beta = 0.066$; $p = 0.070$) or between relative dependence and customer loyalty ($\beta = 0.053$; $p = 0.074$). These results indicate that commitment and relative dependence tend to shape customer loyalty directly. Overall, customer satisfaction has a selective mediating role and is only the main mediating mechanism in the relationship between trust and customer loyalty in the context of B2B relationships in the shipping industry.

From the results of the direct and indirect influence tests that have been carried out, there are analysis results from the hypothesis in this study, the visualization of which can be seen in the following image :

The test results show that commitment has a positive and significant effect on customer satisfaction ($\beta = 0.171$; $p = 0.044$), thus H1 is accepted. This finding indicates that the higher the commitment of corporate customers in maintaining business relationships with shipping companies, the higher the perceived satisfaction in the cooperative relationship. The results of this study align with the relationship marketing theory of Morgan and Hunt (1994), which states that commitment is a form of long-term orientation that can create relationship stability and reduce uncertainty in business cooperation. This finding also supports Gansser et al. (2021). and Arthur et al. (2024) which explains that commitment reflects a business partner's willingness to build stable relationships and maintain long-term cooperation. In the context of the Indonesian shipping industry, commitment demonstrated through consistent service, ongoing communication, and a long-term relationship orientation increases customer satisfaction by providing certainty and security for corporate customers.

In addition to relationship commitment, trust is also an important factor in shaping customer satisfaction. The test results show that trust has a positive and significant effect on customer satisfaction ($\beta = 0.663$; $p = 0.000$), thus H2 is accepted. This finding indicates that trust is the most dominant factor in shaping customer satisfaction. The results of this study support the relationship marketing theory of Morgan & Hunt (1994) which places trust as the main foundation of long-term business relationships, and are in line with Amoako et al. (2020) and Arthur et al. (2024) who explain that trust increases satisfaction through confidence in the reliability, integrity, and operational capabilities of business partners. In the Indonesian shipping industry, corporate customers are highly dependent on service consistency, schedule accuracy, distribution security, and the ability of shipping companies to maintain smooth operations, making trust a key factor in increasing customer satisfaction.

Not only relational factors such as commitment and trust, but the level of inter-company dependence also contributes to the formation of customer satisfaction. The test results show that relative dependence has a positive and significant effect on customer satisfaction ($\beta = 0.139$; $p = 0.013$), thus H3 is accepted. This finding indicates that the higher the customer's dependence on the shipping company, the higher the level of customer satisfaction with the established business relationship. These results support Arthur et al. (2024) , Scheer et al. (2015) , and Madanaguli et al. (2022) who explain that dependence arises because of relational, operational, and strategic benefits that are difficult to replace by other alternatives. In the Indonesian shipping industry, which has high switching costs and a strong need for operational continuity, customers tend to evaluate relationships more positively when shipping companies are able to provide operational certainty and consistent business support.

After identifying the factors influencing customer satisfaction, this study further examined the role of customer satisfaction in shaping customer loyalty. The test results showed that customer satisfaction had a positive and significant effect on customer loyalty ($\beta = 0.385$; $p = 0.006$), thus H4 was accepted. This finding indicates that the higher the customer satisfaction, the higher the loyalty of corporate customers towards shipping companies. The results of this study support Li et al. (2020) , Arthur et al. (2024) , and Ahrholdt et al. (2019). which states that customer satisfaction is a positive evaluation of the quality of relationships and services that encourages customers to maintain long-term business relationships. In the context of the Indonesian shipping industry, satisfaction derived from operational reliability, schedule accuracy, quality of coordination, and the ability to maintain the supply chain are important factors in building customer loyalty.

Furthermore, this study examined whether customer satisfaction acts as a mediating mechanism in the relationship between relational factors and customer loyalty. The test results showed that customer satisfaction did not significantly mediate the relationship between commitment and customer loyalty ($\beta = 0.066$; $p = 0.070$), thus H5a was rejected. This finding suggests that commitment is more likely to shape loyalty directly than through customer satisfaction mechanisms. This result is not entirely in line with Arthur et al. (2024) , but supports Amoako et al. (2020) who explained that in certain B2B contexts, commitment can directly drive the sustainability of business relationships. In the shipping industry, corporate customer loyalty is shaped more by strategic commitment, long-term relationships, and the need to maintain operational continuity than by mere satisfaction evaluations.

Unlike commitment, customer satisfaction has been shown to play a significant mediating role in the relationship between trust and customer loyalty. The test results show that customer satisfaction significantly mediates the relationship between trust and customer loyalty ($\beta = 0.255$; $p = 0.009$), thus H5b is accepted. This finding indicates that trust does not directly shape customer loyalty, but first increases customer satisfaction, which then drives customer loyalty. This result is in line with Social Exchange Theory and Arthur et al. (2024) who explain that trust does not always result in loyalty directly, but rather through positive customer evaluations of business relationships. In the shipping industry, trust must be manifested in operational quality, schedule accuracy, fleet reliability, and the ability to meet customer needs before developing into loyalty.

Meanwhile, a different pattern was found in the relationship between relative dependence and customer loyalty. The test results showed that customer satisfaction did not significantly mediate the relationship between relative dependence and customer loyalty ($\beta = 0.053$; $p = 0.074$), so H5c was rejected. This finding indicates that the influence of relative dependence on customer loyalty is stronger when it occurs directly. This result differs from Arthur et al. (2024) , but is in line with Blut et al. (2014) who stated that in a B2B context with high switching costs and structural dependence, loyalty can be formed without being

mediated by customer satisfaction. In the shipping industry, corporate customer loyalty is heavily influenced by operational needs, limited alternatives, and high switching costs.

In addition to testing the indirect effect through customer satisfaction, this study also analyzed the direct effect of relational factors on customer loyalty. The test results showed that commitment had a positive and significant effect on customer loyalty ($\beta = 0.182$; $p = 0.037$), thus H6 was accepted. This finding supports Amoako et al. (2020), Cater & Zabkar (2009), Bricci et al. (2016), and Amoako et al. (2020) explain that commitment reflects a relationship sustainability orientation and the belief that business relationships are worth maintaining in the long term. In the context of the Indonesian shipping industry, customer loyalty is formed due to relational commitment, operational continuity, and a long-term collaboration orientation that creates relational continuity and stability of business relationships.

Unlike commitment, trust did not show a significant direct effect on customer loyalty. The test results showed that trust had no significant effect on customer loyalty ($\beta = 0.027$; $p = 0.425$), so H7 was rejected. This result differs from Cardoso et al. (2022), Chen et al. (2022), Zegullaj et al. (2023), and Leninkumar (2017) who found a direct effect of trust on loyalty. A possible explanation for this inconsistency with previous studies lies in the unique characteristics of the shipping industry. In many service industries, trust can directly foster loyalty because customers primarily evaluate relational quality and service experiences. However, in shipping services, customers are generally corporate organizations that make decisions based on operational performance, supply chain continuity, risk management, and economic considerations rather than trust alone. Consequently, trust may be viewed as a prerequisite for cooperation rather than a sufficient condition for loyalty. Customers become loyal only when trust is translated into tangible operational outcomes such as reliable vessel availability, schedule accuracy, cargo security, and consistent service performance. This industry-specific condition may explain why trust failed to exert a direct effect on loyalty in the present study while remaining significant through customer satisfaction. The findings of this study indicate that in the context of the B2B shipping industry, customers do not become loyal simply because they trust the company, but rather require a satisfying relationship experience first. These results strengthen the mediation finding that customer satisfaction plays a full mediation role, so that customer loyalty in the shipping industry is more experience-based loyalty than purely trust-based loyalty.

Finally, the results of the study indicate that the dependency factor plays a stronger role than other relational factors in directly shaping customer loyalty. The test results indicate that relative dependence has a positive and significant effect on customer loyalty ($\beta = 0.362$; $p = 0.000$), thus H8 is accepted. This finding supports Scheer et al. (2015), Mishra et al. (2017), Scheer et al. (2010), Chen et al. (2023), and Amoako et al. (2020) who explain that customers who have a high level of dependency on business partners tend to show stronger loyalty. In the Indonesian shipping industry, the high dependence on fleet readiness, service continuity, operational reliability, and high switching costs cause customers to be more likely to maintain long-term cooperative relationships with shipping companies that are able to consistently meet their business needs. Although several findings are consistent with prior relationship marketing and B2B loyalty studies, the results of this research suggest that the shipping industry exhibits a more complex loyalty formation mechanism than that commonly reported in the literature. In particular, relative dependence emerged as one of the strongest direct predictors of customer loyalty, while customer satisfaction played a more selective mediating role. These findings indicate that loyalty in shipping services is not solely driven by positive evaluations of service performance but is also shaped by operational continuity requirements, fleet availability considerations, and the strategic importance of maintaining stable logistics relationships. Therefore, the results extend existing B2B loyalty theories by

highlighting the importance of structural and operational factors in addition to traditional relational factors.

Multi-Group Analysis (MGA) was conducted by comparing respondents based on years of B2B relationship, frequency of shipping service usage, number of employees, and firm asset size. Prior to the MGA, the Measurement Invariance of Composite Models (MICOM) procedure confirmed partial measurement invariance across all comparison groups, indicating that the structural relationships could be validly compared across different customer segments.

Overall, the MGA results indicate that the structural relationships are largely consistent across customer groups. No significant differences were observed based on years of B2B relationship, number of employees, or firm asset size, suggesting that the mechanisms through which commitment, trust, relative dependence, and customer satisfaction influence customer loyalty remain stable across different organizational characteristics. However, customer groups with different frequencies of shipping service usage exhibited significant differences in two relationships. Specifically, the effect of customer satisfaction on customer loyalty was stronger among customers using shipping services less frequently, whereas the effect of commitment on customer loyalty was stronger among customers with more frequent service usage. These findings suggest that relationship experience gradually shifts the basis of customer loyalty from satisfaction-driven evaluations toward stronger relational commitment among frequent customers.

CONCLUSION

The conclusion of this study shows that customer loyalty in B2B relationships in the Indonesian shipping industry is directly influenced by commitment, relative dependence, and customer satisfaction, while trust has no direct effect on customer loyalty. Furthermore, customer satisfaction is only proven to mediate the relationship between trust and customer loyalty, while commitment and relative dependence have a direct relationship with customer loyalty. These findings indicate that corporate customer loyalty is not only shaped by satisfaction and trust, but also by long-term commitment, high switching costs, and operational dependency between customers and shipping companies.

This study strengthens Social Exchange Theory and Commitment–Trust Theory by showing that B2B customer loyalty in the shipping industry is formed through different relational mechanisms, where trust influences customer loyalty through customer satisfaction, while commitment and relative dependence directly influence customer loyalty. These findings indicate that corporate customer loyalty is not only influenced by satisfaction, but also by structural factors, long-term relationship orientation, switching costs, and high operational dependence. Managerially, shipping companies need to strengthen commitment through consistent communication and long-term cooperation, increase trust through operational reliability, schedule accuracy, information transparency, and fulfillment of service commitments, and build more integrated relationships with customers to create sustainable operational dependence that is difficult to replace by competitors.

This study has several limitations, including the use of a cross-sectional approach that is unable to capture the dynamics of long-term B2B relationships, the use of purposive sampling that limits the generalizability of the results, the focus of the study which only covers commitment, trust, relative dependence, customer satisfaction, and customer loyalty, and the research context which is limited to the shipping industry in Indonesia. In addition, differences in the operational characteristics of respondents and the use of perception-based data through questionnaires also have the potential to influence the results of the study. Therefore, further research is recommended to use a longitudinal approach, apply probability sampling with a larger number of respondents, add other variables such as service quality,

perceived value, switching cost, digital integration, and operational performance, expand the research object to other industries or countries, segment respondents based on operational characteristics, and combine quantitative and qualitative approaches to gain a more comprehensive understanding of the formation of customer loyalty in B2B relationships.

REFERENCES

- Ahmed Doma, S. S. B. (2013). Relationship quality as predictor of B2B customer loyalty. *Systemics, Cybernetics and Informatics*, 11(1).
- Ahrholdt, D. C., Gudergan, S. P., & Ringle, C. M. (2019). Enhancing loyalty: When improving consumer satisfaction and delight matters. *Journal of Business Research*, 94, 18–27.
- Albertijn, S., Bessler, W., & Drobetz, W. (2011). Financing shipping companies and shipping operations: A risk-management perspective. *Journal of Applied Corporate Finance*, 23(4), 70–82.
- Andy, W. U., & Dahlan, K. S. S. (2023). The impact of digital trust on customer satisfaction and loyalty (The case of digitalization in container shipping services in Indonesia). *OPSearch: American Journal of Open Research*, 2(12), 816–827.
- Aritonang, F. N. T., Arkady, J. C., Torindatu, L. A. R., & Silalahi, V. A. J. M. (2025). Indonesia's Position as a Maritime Axis in the Global Logistics Chain. *JIPOWER: Journal of Intellectual Power*, 2(1), 110–123.
- Arthur, E., Agbemabiese, G. C., Amoako, G. K., & Anim, P. A. (2024). Commitment, trust, relative dependence, and customer loyalty in the B2B setting: the role of customer satisfaction. *Journal of Business & Industrial Marketing*, 39(5), 933–948.
- Balci, G., Caliskan, A., & Yuen, K. F. (2019). Relational bonding strategies, customer satisfaction, and loyalty in the container shipping market. *International Journal of Physical Distribution & Logistics Management*, 49(8), 816–838.
- Bang, H.-S., Kang, H.-W., Martin, J., & Woo, S.-H. (2012). The impact of operational and strategic management on liner shipping efficiency: a two-stage DEA approach. *Maritime Policy & Management*, 39(7), 653–672.
- Besson, E. (2018). Service business markets: relationship development in the maritime industry. *Journal of Business-to-Business Marketing*, 25(4), 273–297.
- Blut, M., Beatty, S. E., Evanschitzky, H., & Brock, C. (2014). The impact of service characteristics on the switching costs–customer loyalty link. *Journal of Retailing*, 90(2), 275–290.
- Bricci, L., Fragata, A., & Antunes, J. (2016). The effects of trust, commitment and satisfaction on customer loyalty in the distribution sector. *Journal of Economics, Business and Management*, 4(2), 173–177.
- Caliskan, A., & Esmer, S. (2020). An assessment of port and shipping line relationships: the value of relationship marketing. *Maritime Policy & Management*, 47(2), 240–257.
- Cardoso, A., Gabriel, M., Figueiredo, J., Oliveira, I., Rêgo, R., Silva, R., Oliveira, M., & Meirinhos, G. (2022). Trust and loyalty in building the brand relationship with the customer: Empirical analysis in a retail chain in northern Brazil. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 109.
- Cater, B., & Zabkar, V. (2009). Antecedents and consequences of commitment in marketing research services: The client's perspective. *Industrial Marketing Management*, 38(7), 785–797.
- Chen, X., Guo, S., Xiong, J., & Ye, Z. (2023). Customer engagement, dependence and loyalty: An empirical study of Chinese customers in multitouch service encounters. *Technological Forecasting and Social Change*, 197, 122920.

- Chen, Y., Prentice, C., Weaven, S., & Hisao, A. (2022). The influence of customer trust and artificial intelligence on customer engagement and loyalty—The case of the home-sharing industry. *Frontiers in Psychology*, 13, 912339.
- Dimou, E. (2021). *Technology and its effects on Customer Relationship Management (CRM) of shipping companies*. Πανεπιστήμιο Πειραιώς.
- Fanam, P., Nguyen, H.-O., & Cahoon, S. (2016). *Competitiveness of the liner operators: methodological issues and implications*.
- Gansser, O. A., Boßow-Thies, S., & Krol, B. (2021). Creating trust and commitment in B2B services. *Industrial Marketing Management*, 97, 274–285.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Springer.
- Hartanto, H., Victoria, O. A., & Chuasanga, A. (2019). Maritime Transportation in Indonesian Policy. *J. Pembaharuan Huk*, 6, 36–44.
- Humaerah, A. S., & Mokodompit, E. A. (2026). Strategi Investasi Berkelanjutan dalam Industri Pelayaran: Analisis Risiko, Teknologi, dan Daya Saing Global. *RIGGS: Journal of Artificial Intelligence and Digital Business*, 4(4), 2699–2704.
- Jang, H. M., Marlow, P. B., & Mitroussi, K. (2013). The effect of logistics service quality on customer loyalty through relationship quality in the container shipping context. *Transportation Journal*, 52(4), 493–521.
- Jiang, X., Mao, H., Wang, Y., & Zhang, H. (2020). Liner shipping schedule design for near-sea routes considering big customers' preferences on ship arrival time. *Sustainability*, 12(18), 7828.
- Justavino-Castillo, M. E., Gil-Saura, I., Fuentes-Blasco, M., Moliner-Velázquez, B., & Servera-Francés, D. (2023). Managing sustainable practices and logistics value to improve customer loyalty: importers vs. freight forwarders. *WMU Journal of Maritime Affairs*, 1.
- Kofi Amoako, G., Baadu Adams, G., & Doe, J. K. (2020). Intention to continue relationship in B-to-B setting—case of Guinness Ghana breweries—some preliminary findings. *Journal of Business-to-Business Marketing*, 27(1), 81–94.
- Lau, Y., Ng, K. Y. A., Yang, Z., Wang, T., & Poo, M. C.-P. (2025). *Maritime Transport and Supply Chain Resilience*. Springer.
- Leninkumar, V. (2017). The relationship between customer satisfaction and customer trust on customer loyalty. *International Journal of Academic Research in Business and Social Sciences*, 7(4), 450–465.
- Li, H., Liu, Y., Tan, C.-W., & Hu, F. (2020). Comprehending customer satisfaction with hotels: Data analysis of consumer-generated reviews. *International Journal of Contemporary Hospitality Management*, 32(5), 1713–1735.
- Lin, X., Mamun, A. Al, Yang, Q., & Masukujjaman, M. (2023). Examining the effect of logistics service quality on customer satisfaction and re-use intention. *PloS One*, 18(5), e0286382.
- Madanaguli, A. T., Dhir, A., Talwar, S., Singh, G., & Escobar, O. (2022). Business to business (B2B) alliances in the healthcare industry: a review of research trends and pertinent issues. *Journal of Business & Industrial Marketing*, 37(8), 1688–1705.
- Mishra, H. G., Sinha, P. K., & Koul, S. (2017). Customer dependence and customer loyalty in traditional and modern format stores. *Journal of Indian Business Research*, 9(1), 59–78.
- Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20–38.

- Negkakakis, I. C. (2025). How capital leases affect firm performance: an analysis in the shipping industry. *Journal of Risk and Financial Management*, 18(7), 371.
- Neuman, W. L. (2014). Social Research Methods: Qualitative and Quantitative Approaches (7th ed.). In Pearson. <https://doi.org/10.2307/3211488>
- Nowińska, A., & Schramm, H.-J. (2021). Uncertainty, status-based homophily, versatility, repeat exchange and social exchange in the container shipping industry. *Journal of Business Research*, 128, 524–536.
- Ortega, S. A., & Gevero, R. D. (2024). Service Reputation and Customer Loyalty in Ocean Freight Forwarders: An Exporters' Perspective in Mindanao Regions. *Digital Journal Philippines*, 1(1), 1–10. <https://doi.org/https://doi.org/10.62718/vmca.log-ijcatf.1.1.SC-0524-009>
- Raj, R., Kumar, V., Mittal, A., Verma, P., Lai, K.-K., & Singh, A. (2025). Practices and strategies for global sourcing and supply chain management: a Pareto analysis and MOORA a mixed method approach. *Journal of Global Operations and Strategic Sourcing*, 18(3), 447–470.
- Salman, M. (2025). Exploring economic and cargo efficiencies in the global shipping sector: A convergence analysis. *Journal of Cleaner Production*, 501, 145298.
- Scheer, L. K., Miao, C. F., & Garrett, J. (2010). The effects of supplier capabilities on industrial customers' loyalty: the role of dependence. *Journal of the Academy of Marketing Science*, 38(1), 90–104.
- Scheer, L. K., Miao, C. F., & Palmatier, R. W. (2015). Dependence and interdependence in marketing relationships: Meta-analytic insights. *Journal of the Academy of Marketing Science*, 43(6), 694–712.
- Shinohara, M., Nomura, S., Suzuki, H., & Matsuda, T. (2018). Shipping business strategies in the Japanese maritime industry. In *Maritime Business and Economics* (pp. 23–35). Routledge.
- Sigalas, C. (2025). Resource allocation choices in asset-intensive industries. *European Management Review*, 22 (4), 952–971.
- Statistics, BP (2026). *Official Statistics News*. <https://www.bps.go.id/id/pressrelease/2026/02/02/2537/ekspor-dan-impor-indonesia-desember-2025-masing-masing-tercatat-usd-26-35-miliar-dan-usd-23-83-miliar.html>
- Tran, T. M. T., Woo, S.-H., & Yuen, K. F. (2021). The impacts of sustainable inter-firm collaboration on business performance of shipping companies. *The International Journal of Logistics Management*, 32(3), 766–789.
- Wang, L. (2024). A Study of Competition and Quality of Service Pricing for Duopoly Shipping Companies Considering Uncertain Demand. *Proceedings of the 4th International Conference on Informatization Economic Development and Management, IEDM 2024, February 23--25, 2024, Kuala Lumpur, Malaysia*.
- Wei, L. (2025). Optimizing cash flow management for ship financing leasing: Risk identification, risk assessment, and management strategies. *Cogent Business & Management*, 12(1), 2464941.
- Wiedmer, R., Polyviou, M., & Paraskevas, J. (2024). Does global supply chain integration pay off? The case of maritime shipping firms. *Journal of Business Logistics*, 45(1), e12350.
- Williams, P., Ashill, N. J., & Naumann, E. (2023). Drivers of contract renewal over time: a framework of analysis in B2B services. *Journal of Strategic Marketing*, 1–19.
- Yan, R., Chu, Z., Wu, L., & Wang, S. (2024). Predicting vessel service time: A data-driven approach. *Advanced Engineering Informatics*, 62, 102718.

- Yorulmaz, M., & Taş, A. (2022). Mediating effect of customer satisfaction on the relationship between core service quality and behavioral intentions in liner shipping. *Pomorstvo*, 36(1), 3–13.
- Zegullaj, F., Zeqiri, J., Reshidi, N., & Abazi-Alili, H. (2023). The impact of customer relationship marketing on customer loyalty: evidence from the banking sector. *International Journal of Customer Relationship Marketing and Management (IJCRMM)*, 14(1), 1–17.
- Zhang, P., & Tang, L. (2021). *Ship management: theory and practice*. Routledge.
- Zhang, X., & Yin, J. (2021). Assessment of investment decisions in bulk shipping through fuzzy real options analysis. *Maritime Economics & Logistics*, 25(1), 122.