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The Influence of Channel Integration and Logistics Service Quality on Repurchase Intention Mediated by Customer Satisfaction (Study at DHL Express Pekanbaru)

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Abstract

Digital transformation in the logistics industry has prompted express delivery service providers to integrate physical and digital channels to meet increasingly complex customer expectations. This study aims to analyze the influence of Perceived Channel Integration Quality and Perceived Logistics Service Quality on Repurchase Intention, mediated by Transaction-Specific Satisfaction and Cumulative Satisfaction. The study uses a quantitative approach with Partial Least Squares Structural Equation Modeling (PLS-SEM), with data collected from 335 DHL Express Pekanbaru customers through purposive sampling. The results show that both Perceived Channel Integration Quality and Perceived Logistics Service Quality have a significant positive effect on both forms of customer satisfaction, which, in turn, have a significant effect on repurchase intentions. Among the mediating variables, Transaction-Specific Satisfaction emerged as the most influential predictor of repurchase behavior. Multi-Group Analysis shows that service types do not significantly moderate the relationships between constructs. These findings emphasize the importance of channel integration optimization strategies and ensuring consistency in the service experience to build long-term customer loyalty in an omnichannel logistics environment.

Keywords: Channel Integration Quality, Logistics Service Quality, Customer Satisfaction, Repurchase Intent, Omnichannel

INTRODUCTION

The digital transformation in the global logistics industry has created a new paradigm in express delivery services, where the integration of technology and customer experience is a key factor in determining the competitiveness of companies. Indonesia's logistics industry is experiencing rapid growth as e-commerce and the digital economy develop, with the demand for efficient, flexible, and technology-based logistics services increasing. In 2023, Indonesia will become the leader of the ASEAN e-commerce market with a 40% share and a transaction value of USD 77 billion (Logistiknews.id, 2025). This exponential growth is driven by high internet penetration, changes in consumer behavior, and the rise of digital platforms such as content commerce, omnichannel, and social commerce.

Global trends show that logistics customer preferences have evolved from a focus on cost efficiency to a need for convenience, flexibility, and transparency of shipping, including multichannel access and real-time tracking. In line with the transformation of the national logistics sector, the projected increase in the size of Indonesia's freight and logistics market is estimated to grow from USD 131.2 billion in 2025 to USD 178.1 billion in 2030, with a CAGR of 6.29%

(Mordor Intelligence, 2025). This growth reflects the increasing demand for logistics services that are responsive to digital dynamics while emphasizing the importance of service innovation, information technology integration, and the ability of service providers to meet consumer expectations for speed, transparency, and flexibility.

In the specific context of DHL Express Pekanbaru, the implementation of an omnichannel strategy has shown paradoxical results. Although the data show a significant increase in the number of customers from 246 in 2023 to 390 in 2024 (an increase of 58.5%), the repurchase rate only rose by 14.8%, from 54 to 62 repeat customers. This disparity indicates a fundamental gap between a company's ability to attract new customers and maintain existing customer loyalty.

Channel usage distribution data show that walk-ins are still predominantly used by 49% of customers, while digital channels such as websites (33%), applications (10%), call centers (5%), and chatbots (3%) have not been optimally utilized. This disparity reflects the challenges of creating seamless omnichannel experiences, where customers still rely on physical interactions even though digital infrastructure is in place. Even more worrying, customer reviews reveal information inconsistencies between digital and physical operational channels, such as differences in operating hours recorded in the online system versus the reality in the field.

The urgency of this research arises from the need to understand the complex mechanisms that link the quality of channel integration and logistics services with customer loyalty in the context of omnichannel. Prassida & Hsu (2022) emphasize that service quality and channel integration have a significant impact on customer satisfaction, both in the context of individual transactions and the overall experience. However, the main challenge in implementing an omnichannel strategy is ensuring synchronization of delivery data, coordination between digital and physical services, and creating consistency of customer experience across points of interaction.

The frequent mismatches between online systems and physical services can lead to confusion and customer dissatisfaction. As revealed by Gao & Fan (2021), if the tracking system shows that the delivery has been completed but the courier informs of a delay, this can damage customer trust in the service provider. In a highly competitive logistics industry, inconsistencies like these can have a direct impact on churn rates and long-term profitability.

The existing literature shows that research on omnichannel in the logistics industry is still limited compared to the retail sector. Chen et al. (2023) state that alignment in omnichannel services not only increases customer satisfaction but also strengthens their attachment to the brand. However, the study focuses more on the context of conventional retail. Ismail & Kortam (2024) found that consistency and good integration between channels greatly affect customer satisfaction, but this study has not explored in depth the role of satisfaction mediation in the context of logistics services.

Sumrit & Sowijit (2023) identified that channel integration, service quality, supply chain flexibility, and responsiveness greatly influence the success of omnichannel strategies. If not optimal, the customer experience becomes fragmented, lowering satisfaction and loyalty. However, their research did not specifically test the mediating mechanism of specific and cumulative transaction satisfaction in shaping repurchase intention.

Lin et al. (2023) explain that logistics service quality (PLSQ), which includes the dimensions of operational quality, resources, information, personal contact, and customization, has a significant positive impact on customer satisfaction. These factors not only have a direct effect on customer satisfaction but also affect their intention to reuse logistics services. However, the research has not comprehensively integrated the omnichannel aspect.

The main novelty of this research lies in several innovative aspects. First, this study adopts an integrative approach that combines the perspectives of Perceived Channel Integration Quality (PCIQ) and Perceived Logistics Service Quality (PLSQ) in one comprehensive model. Different from previous studies that tend to separate these two aspects, this study explores the synergistic interaction between the quality of canal integration and the quality of logistics services.

Second, this study introduces a dual-mediation mechanism through Transaction-Specific Satisfaction (TSS) and Cumulative Satisfaction (CUS), which provides a nuanced understanding of how customer satisfaction is formed in the context of omnichannel logistics. Prassida & Hsu (2022) highlight that cumulative satisfaction better predicts customer intent to use a service again than satisfaction from a single transaction but have not explored this dual mediation mechanism empirically.

Third, this study uses Multi-Group Analysis to test the effect of hybrid service type moderation (BOPS vs. BSSD), which is a new methodological contribution to the omnichannel logistics literature. This approach allows for the identification of differences in customer response patterns based on their service channel preferences.

The main objective of this study is to analyze the influence of Perceived Channel Integration Quality and Perceived Logistics Service Quality on repurchase intention mediated by Transaction-Specific Satisfaction and Cumulative Satisfaction. Specifically, this study aims to: (1) evaluate the direct influence of logistics service quality on the perception of channel integration; (2) analyze the mediating effect of specific and cumulative transaction satisfaction in the relationship between PCIQ, PLSQ, and repurchase intention; (3) test the effect of hybrid service type moderation on structural relationships in the model; and (4) provide strategic recommendations for the optimization of DHL Express Pekanbaru's omnichannel strategy.

From a theoretical perspective, this research is expected to enrich the academic literature on omnichannel strategies in the logistics industry, particularly in express delivery services. The study provides insights into how the quality of logistics services and channel integration affect customer satisfaction and repurchase intent, which was still limited in previous research. This research also contributes to developing theories related to the application of digital technology in logistics services, such as real-time tracking systems, mobile applications, and delivery flexibility.

From a practical point of view, this study provides an objective evaluation related to the effectiveness of DHL Express Pekanbaru's omnichannel strategy in integrating digital and physical services. The results are expected to be a consideration for companies to identify the strengths and weaknesses of current strategies, as well as develop strategic steps that are more responsive to customer needs. By analyzing how customers respond to the integration of physical and digital channels, this study helps DHL Express Pekanbaru understand customer expectations regarding

delivery services, including in terms of speed, accuracy, ease of tracking, and flexibility of delivery options.

The findings from this study can serve as a guide for other logistics companies in implementing omnichannel strategies. By understanding how the integration of digital channels and technologies can improve customer satisfaction, the logistics industry can adapt to digitalization trends and market demands. This research also provides insights for policymakers and regulators regarding the importance of supporting the digitalization of the logistics sector, which is expected to encourage policies that facilitate the adoption of technology in logistics services, accelerate digital transformation, and increase the competitiveness of logistics business actors at the national and global levels.

METHOD

This study uses a quantitative approach with Structural Equation Modeling - Partial Least Squares (SEM-PLS). The research design is descriptive-confirmatory with a positivism paradigm and a deductive theory development approach. Data was collected through an online survey using Google Forms which was distributed to DHL Express Pekanbaru customers.

The population consists of all DHL Express customers who use delivery services through Pekanbaru service points, totaling 497 customers from 2023 to Q1 2025. The sample size was determined using the Slovin formula with a margin of error of 3.12%, resulting in 335 respondents selected through purposive sampling technique.

The sampling criteria include: (1) DHL Express Pekanbaru customers who have used delivery services through the Book Online Drop Off (BOPS) or Book in Service Point Ship Direct (BSSD) method, (2) omnichannel channel users such as walk-ins to service points, mobile applications, websites, call centers, or chatbots, and (3) customers who prioritize service quality in shipping goods.

The research variables consisted of five main constructs adapted from Prassida & Hsu (2022): Perceived Channel Integration Quality (32 items), Perceived Logistics Service Quality (15 items), Transaction-Specific Satisfaction (3 items), Cumulative Satisfaction (3 items), and Repurchase Intention (3 items). All items were measured using a 7-point Likert scale.

Data analysis was carried out using SmartPLS 4.0 software with two main stages: evaluation of the outer model (measurement model) to test the validity and reliability, and the evaluation of the inner model (structural model) to test the hypothesis and analyze the relationship between constructs.

RESULT AND DISCUSSION

Descriptive Analysis

According to Sugiyono (2019), descriptive analysis is a statistical method used to process and present data by describing or explaining general data conditions so that it is easy to understand. This technique aims to convey important information from the data, such as mean values, standard deviations, variances, and highest and lowest values.

Perceived Channel Integration Quality (PCIQ)

Based on the results of DHL Express customer perception data processing in measuring Perceived Channel Integration Quality (PCIQ), an actual score of 62,736 was obtained out of a total ideal score of 75,040, with an average percentage of 84.0%. This value shows that in general the channel integration implemented by DHL has gone well and has been positively received by customers.

Table 1. Descriptive Analysis of PCIQ Variables

Dimension	Item	STS	TS	CTS	N	CS	S	SS	Total	Ideal Score	Percentage
Perceived Channel Breadth											
	BCC1	5	2	1	8	84	150	85	1959	2345	83.5%
	BCC2	3	1	5	16	96	130	84	1932	2345	82.4%
	BCC3	1	1	1	7	130	130	65	1919	2345	81.9%
Perceived Channel Transparency											
	TCC1	3	4	6	19	92	120	91	1922	2345	82.0%
	TCC2	2	2	1	21	96	110	103	1954	2345	83.3%
	TCC3	3	3	2	18	60	160	89	1970	2345	84.0%
Perceived Channel Appropriateness											
	APC1	2	1	5	15	61	150	101	1991	2345	84.9%
	APC2	4	2	1	8	78	160	82	1967	2345	83.9%
Perceived Information Consistency											
	INC1	4	6	12	7	36	165	105	1985	2345	84.7%
	INC2	5	1	8	11	50	150	110	1995	2345	85.0%
	INC3	6	1	6	12	78	135	97	1953	2345	83.2%
	INC4	3	4	7	4	65	130	122	2007	2345	85.6%
TOTAL									**62.736**	**75.040**	**84,0%**

Source: SmartPLS Data Processing 4.0

The results of the analysis showed that customer perception of the quality of DHL Express channel integration was in the "Agree" category with a score of 84.0%. The highest dimension is Perceived Information Consistency (85.0%), indicating high customer confidence in the consistency of information between channels. The lowest dimension is Perceived Channel Breadth (82.6%), indicating that there is still room for improvement in the diversity of service channels.

The percentage score of 84.0% was in the range of "Agree" to "Strongly Agree" (75.52%--87.76%). This shows that customer perceptions of Perceived Channel Integration Quality are generally agreeable, reflecting the high level of acceptance of DHL's channel integration.

Perceived Logistics Service Quality (PLSQ)

Table 2. Descriptive Analysis of PLSQ Variables

Dimension	Item	STS	TS	CTS	N	CS	S	SS	Total	Ideal Score	Percentage
Perceived Order Quality											
	OQU1	2	5	8	17	41	155	107	1988	2345	84.8%
	OQU2	1	4	7	25	73	110	115	1960	2345	83.6%
	OQU3	5	4	8	25	56	150	87	1926	2345	82.1%
Perceived Order Accuracy											
	OAC1	1	5	7	18	60	145	99	1967	2345	83.9%
	OAC2	2	2	7	27	72	130	95	1940	2345	82.7%
	OAC3	1	2	4	28	70	120	110	1969	2345	84.0%
Perceived Order Condition											
	OCO1	3	3	4	8	67	130	120	2008	2345	85.7%
	OCO2	4	1	8	28	99	110	85	1892	2345	80.7%
	OCO3	3	3	11	20	72	130	96	1934	2345	82.5%
Perceived Timeliness											
	TIM1	3	2	8	26	81	135	80	1910	2345	81.5%
	TIM2	0	1	11	14	52	149	108	2001	2345	85.3%
	TIM3	2	2	6	17	66	121	121	1995	2345	85.1%
Perceived Availability											
	AVA1	4	5	16	27	31	170	82	1919	2345	81.9%
	AVA2	3	5	17	15	72	130	93	1915	2345	81.7%
	AVA3	2	8	8	21	74	131	91	1919	2345	81.8%
TOTAL									**29.243**	**35.175**	**83,0%**

Source: SmartPLS Data Processing 4.0

The quality of DHL Express logistics services is perceived positively with a score of 83.0%. Perceived Order Condition achieved the highest score (83.0%), demonstrating DHL's excellence in maintaining the condition of goods during shipping. Perceived Availability has the lowest score (81.8%), indicating the need to improve service availability.

Measurement Model Test Results (Outer Model)

According to Ghozali (2020), a measurement model known as an outer model is used to test the relationship between indicators and variables measured in the research structure. The main purpose of the outer model is to assess the validity of the construct as well as the reliability of the instruments used in the research. In the validity testing process, this study uses Convergent Validity and Average Extracted Variance (AVE) indicators. Meanwhile, to test reliability, the authors used a combination of reliability tests and internal reliability, using Cronbach's Alpha value as a reference.

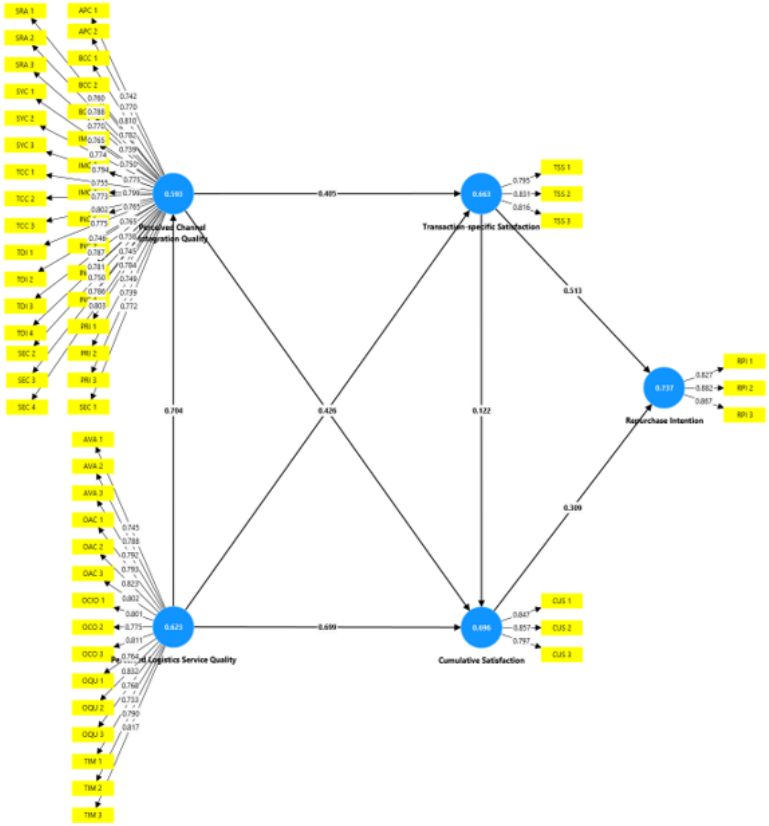

Figure 1. Outer Model Lessons

Source: SmartPLS Data Processing 4.0

Convergent Validity

Convergent validity is part of the evaluation of a reflective measurement model that aims to test the extent to which indicators in a construct consistently reflect the latent variable in question. This test is carried out by referring to the outer loading value, where the indicator is considered to meet the convergent validity if it has a loading value of at least 0.70 in the original construct (Hair et al., 2019).

Table 3. Results of Outer Loading

Construct	Indicator	Outer Loading	Status
PCIQ	BCC1	0,810	Valid
	BCC2	0,782	Valid
	BCC3	0,739	Valid
	TCC1	0,755	Valid
	TCC2	0,773	Valid
	TCC3	0,802	Valid
	...	...	Valid
PLSQ	OQU1	0,764	Valid
	OQU2	0,832	Valid
	OQU3	0,768	Valid

Construct	Indicator	Outer Loading	Status
	...	...	Valid
TSS	TSS1	0,795	Valid
	TSS2	0,831	Valid
	TSS3	0,816	Valid
CUS	CUS1	0,848	Valid
	CUS2	0,856	Valid
	CUS3	0,798	Valid
RPI	RPI1	0,847	Valid
	RPI2	0,857	Valid
	RPI3	0,797	Valid

Source: SmartPLS Data Processing 4.0

The results of the analysis show that all indicators in each major construct have shown an outer loading value above the required minimum threshold. The loading value ranges from 0.7 to 0.8, suggesting that each indicator has a substantial contribution to shaping the constructed being measured.

Tabel 4. Average Variance Extracted (AVE)

Construct	AVE	Status
Perceived Channel Integration Quality	0,593	Valid
Perceived Logistics Service Quality	0,623	Valid
Transaction-specific Satisfaction	0,663	Valid
Cumulative Satisfaction	0,696	Valid
Repurchase Intention	0,737	Valid

Source: SmartPLS Data Processing 4.0

Discriminant Validity

Discriminant validity testing was carried out using two approaches: the Fornell-Larcker criteria and the Heterotrait-Monotrait Ratio (HTMT). According to Henseler et al. (2015) and Hair et al. (2019), discriminant validity is fulfilled if the HTMT value between constructs is below the threshold of 0.90.

Tabel 5. Heterotrait Monotrait Ratio of Correlations (HTMT)

Construct	PCIQ	PLSQ	TSS	CUS	RPI
PCIQ	-				
PLSQ	0,723	-			
TSS	0,756	0,744	-		
CUS	0,805	0,805	0,768	-	
RPI	0,535	0,514	0,734	0,836	-

Source: SmartPLS Data Processing 4.0

Based on the results obtained, all HTMT values in this model are within this threshold, with the highest value being 0.836 in the Transaction-Specific Satisfaction and Repurchase Intention construct pairs. This shows that all constructs in the model have adequate discriminant validity.

Tabel 6. Fornell Lacker Criterion

Construct	CUS	PCIQ	PLSQ	RPI	TSS
CUS	0,834				
PCIQ	0,707	0,770			
PLSQ	0,699	0,704	0,789		
RPI	0,590	0,482	0,458	0,859	
TSS	0,592	0,649	0,632	0,658	0,814

Source: SmartPLS Data Processing 4.0

Construct Reliability

Construct reliability testing aims to assess the internal consistency of the indicator in measuring latent constructs. The two measures used in this study are Cronbach's Alpha and Composite Reliability (CR). Based on general criteria, a construct is declared reliable if Cronbach's Alpha and CR values ≥ 0.70 respectively (Hair et al., 2019).

Table 7. Reliability Test Results

Construct	Cronbach's Alpha	Composite Reliability	Status
Perceived Channel Integration Quality	0,978	0,979	Reliable
Perceived Logistics Service Quality	0,957	0,961	Reliable
Transaction Specific Satisfaction	0,746	0,855	Reliable
Cumulative Satisfaction	0,781	0,873	Reliable
Repurchase Intention	0,822	0,894	Reliable

Source: SmartPLS Data Processing 4.0

Based on the table above, all constructs in the model have a Composite Reliability value above the threshold of 0.70, ranging from 0.855 to 0.979, indicating an excellent level of internal consistency. Similarly, all Cronbach's Alpha values also exceed the minimum limit of 0.70.

Structural Model Test Results (Inner Model)

The evaluation of the structural model in this study uses the PLS-SEM approach, focusing on the values of R Square (R^2) and Q Square (Q^2). The R^2 value is used to see how much an endogenous construct can be explained by an exogenous construct. The results of the data processing showed that all endogenous constructs had a fairly good R^2 value, which indicates that the model was able to adequately explain the data variance. Meanwhile, the Q^2 value is used to assess the predictive relevance of the model.

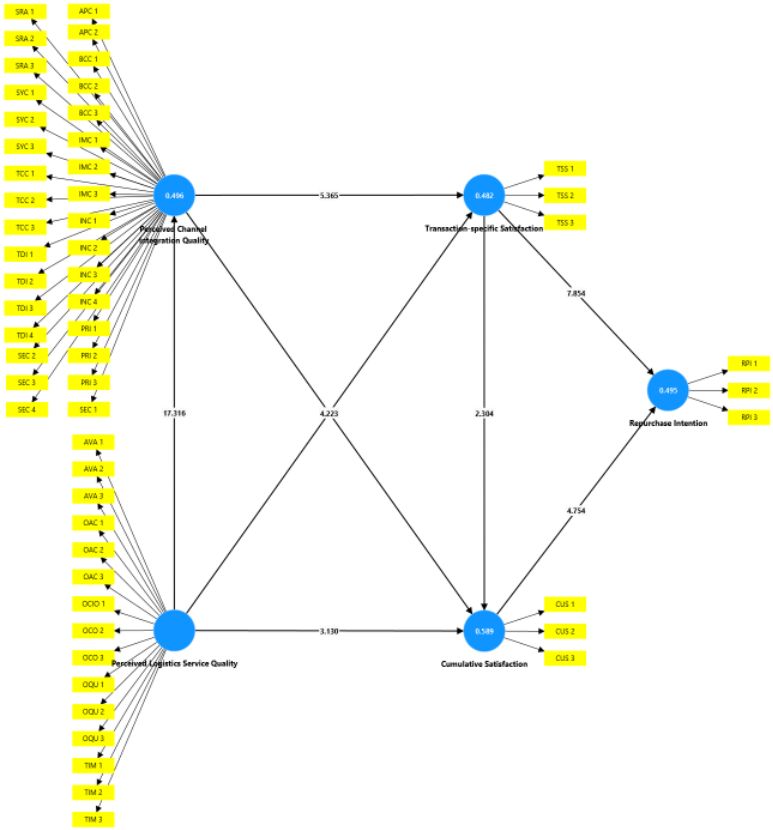

Figure 2. Inner Model Path
Source: SmartPLS Data Processing 4.0

R-Square dan Predictive Relevance

The determination coefficient (R^2) is used to measure how much variance of endogenous constructs can be explained by exogenous constructs in structural models. According to Hair et al. (2019), the R^2 value of 0.25 is considered weak, 0.50 moderate, and 0.75 high in the context of social research.

Table 8. R-Square

Construct	R-square	R-square adjusted
Transaction-specific Satisfaction	0,482	0,479
Cumulative Satisfaction	0,581	0,578
Repurchase Intention	0,495	0,492

Source: SmartPLS Data Processing 4.0

The coefficient of determination (r^2) is used to measure how much variance of endogenous constructs can be explained by exogenous constructs in structural models. According to Hair et al. (2019), the R^2 value of 0.25 is considered weak, 0.50 moderate, and 0.75 high in the context of social research. Based on the estimated results, the cumulative satisfaction construct has the highest r^2 value of 0.581, which indicates that 58.1% of the variance of this construct can be explained by the predictive variables in the model. Meanwhile, the constructs of repurchase

intention (0.495) and transaction-specific satisfaction (0.482) also show a moderate level of explanation. Overall, the R^2 values obtained show that the model has adequate structural explainability, and is able to explain the variability of endogenous constructs empirically in the context of this study.

Q^2 is a measure used to evaluate the predictive relevance of structural models to endogenous constructs. The Q^2 value is obtained through the blindfolding technique, where the value of $Q^2 > 0$ indicates that the model has empirically relevant predictive capabilities against the target variable (Hair et al., 2019).

Tabel 9. Q^2 Predict Relevance

Construct	SSO	SSE	Q^2 (=1-SSE/SSO)
Transaction-specific Satisfaction	1005,000	688,107	0,315
Cumulative Satisfaction	1005,000	603,367	0,400
Repurchase Intention	1005,000	642,983	0,360

Source: SmartPLS Data Processing 4.0

Based on the results in the table, all endogenous constructs show positive Q^2 values, Cumulative Satisfaction constructs have the highest value ($Q^2 = 0.400$), followed by Repurchase Intention (0.360), Transaction-Specific Satisfaction (0.315). All of these values show that the model has a strong predictive ability against each endogenous construct.

Path Coefficient

Path analysis in structural models was carried out to evaluate the strength of influence between latent constructs. The assessment was carried out through the estimation of the value of the path coefficient (original sample), T-statistics, and P-values. According to Hair et al. (2019), the relationship between constructs is categorized as significant if the T value is ≥ 1.96 and the P value is ≤ 0.05 at a significance level of 5%.

Table 10. Path Coeffcient

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Perceived Logistics Service Quality -> Perceived Channel Integration Quality	0.704	0.706	0.041	17.316	0.000
Perceived Channel Integration Quality -> Transaction-specific Satisfaction	0.405	0.402	0.075	5.365	0.000
Perceived Channel Integration Quality -> Cumulative Satisfaction	0.377	0.377	0.089	4.223	0.000
Perceived Logistics Service Quality -> Transaction-specific Satisfaction	0.347	0.351	0.083	4.185	0.000
Perceived Logistics Service Quality -> Cumulative Satisfaction	0.357	0.358	0.114	3.130	0.002

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Transaction-specific Satisfaction -> Cumulative Satisfaction	0.122	0.122	0.053	2.304	0.021
Transaction-specific Satisfaction -> Repurchase Intention	0.475	0.474	0.061	7.854	0.000
Cumulative Satisfaction -> Repurchase Intention	0.309	0.312	0.065	4.754	0.000

Source: SmartPLS Data Processing 4.0

Based on the results of the estimates in the table, all hypothesized paths in the model show strong statistical significance, with a P-value of 0.000 and an overall T-statistical value that exceeds the minimum threshold. These findings indicate that all relationships in the structural model are empirically confirmed.

The most dominant relationship was seen in the path from perceived logistics service quality to perceived channel integration quality with a coefficient of 0.704 and a T-statistic of 17.316, indicating a very strong and significant influence. The path from transaction-specific satisfaction to repurchase intention also showed a large contribution ($\beta = 0.475$, $T = 7.854$), which confirms the strategic role of transactional satisfaction to repurchase intent. Meanwhile, the pathways from perceived channel integration quality to transaction-specific satisfaction ($\beta = 0.405$, $T = 5.365$) and from perceived logistics service quality to transaction-specific satisfaction ($\beta = 0.347$, $T = 4.185$) reflect that both constructs have a significant influence on situational satisfaction experiences. The path to Cumulative Satisfaction also shows significant influence. Perceived Channel Integration Quality ($\beta = 0.377$) and Perceived Logistics Service Quality ($\beta = 0.357$) both had significant contributions, while Transaction-Specific Satisfaction acted as an intermediate variable with moderate influence ($\beta = 0.122$, $T = 2.304$), but remained significant. This supports a model that suggests that satisfaction formed from short-term interactions also contributes to cumulative satisfaction evaluations. Finally, the path from Cumulative Satisfaction to Repurchase Intention ($\beta = 0.309$, $T = 4.754$) suggests that an overall evaluation of the customer experience plays an important role in the formation of repeat intent.

Specific Indirect Effect

The Specific Indirect Effect test aims to determine the extent of the indirect influence of independent variables on dependent variables through intervening constructs. This test was carried out to answer the simultaneous hypothesis that had been formulated in the research model. The testing process was carried out using SmartPLS 4.0 software with the bootstrapping method. The simultaneous hypothesis is said to be significant if the p-value is below 0.05. In addition, the significance can also be assessed through a comparison between the t-statistical value of the test results and the t-table value. If the value of t-statistic is greater than the t-table, then the influence of the variable being tested can be declared significant.

Tabel 11. Specific Indirect Effect

Mediation Pathway	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values	Results
PLSQ → TSS → RPI	0,165	0,166	0,042	3,947	0,000	Signifikan
PCIQ → CUS → RPI	0,116	0,119	0,042	2,766	0,006	Signifikan
PLSQ → CUS → RPI	0,110	0,109	0,036	3,067	0,002	Signifikan
TSS → CUS → RPI	0,038	0,039	0,020	1,854	0,064	Insignificant
PCIQ → TSS → RPI	0,192	0,190	0,043	4,465	0,000	Signifikan

Source: SmartPLS Data Processing 4.0

Multi Group Analysis

According to Hair et al. (2019) in "Partial Least Squares Structural Equation Modeling", Multi-Group Analysis (MGA) is a method used to detect differences in path parameters between groups in the PLS-SEM model. MGA is critical when researchers want to know whether the structural effects of a pathway differ significantly between segments or categories (e.g. industry type, customer type, gender, or specific behavioral groups). In this context, the MGA detects the presence of heterogeneity that cannot be explained by just one common model. The common MGA procedure in PLS includes comparing the path coefficient values between groups, as well as testing the significance of the difference. Hair et al. emphasize that differences are considered significant if the p< value is 0.05 and the coefficient difference between groups is substantial enough to support a theoretical or practical interpretation.

The Multi-Group Analysis (MGA) test was conducted to assess whether there is a difference in the relationship between latent constructs based on two groups of logistics service users, namely BOPS (book online ship direct) and BSSD (book in service point & ship direct). This analysis provides an understanding of the consistency of influences between variables in the context of different customer behaviors.

Table 12. Multi-Group Analysis

	Difference (BOPS - BSSD)	(BOPS vs BSSD) p value
Perceived Channel Integration Quality -> Transaction-specific Satisfaction	0.003	0.487
Perceived Logistics Service Quality -> Transaction-specific Satisfaction	0.025	0.393

Source: SmartPLS Data Processing 4.0

Moderation testing using a multi-group analysis (MGA) approach was conducted to assess whether the type of service (BOPS and BSSD) strengthens the influence of perceived channel integration quality (CIQ) and perceived logistics service quality (LSQ) on transaction-specific satisfaction (TSS). The results showed that the coefficient difference between the BOPS

and BSSD groups for the CIQ → TSS pathway was 0.003 (p = 0.487), and for the LSQ → TSS pathway was 0.025 (p = 0.393). Both p-values exceeded the significance limit of 0.05, so there was no significant moderation effect.

Effect of PLSQ on PCIQ (H1)

The results showed a significant positive influence of PLSQ on PCIQ (β = 0.704; p < 0.001), which was the strongest relationship in the model. These findings are consistent with Hossain et al. (2020) who stated that logistics efficiency is the foundation of the perception of channel integration in omnichannel systems. The high quality of logistics services creates customer confidence that all service channels are connected and functioning in sync.

Effect of PCIQ on TSS (H2)

PCIQ had a significant positive effect on TSS (β = 0.405; p < 0.001). Consistent channel integration provides a seamless service experience, increasing satisfaction in every transaction. These results support Sumrit and Sowijit (2023) who state that omnichannel integration effectively streamlines the transaction process and strengthens customer loyalty.

Effect of PCIQ on CUS (H3)

PCIQ had a significant positive effect on CUS (β = 0.377; p < 0.001). Effective channel integration creates a consistent experience across multiple touchpoints, building a unified perception in customer interactions. These findings are in line with Cheah et al. (2022) who showed that seamless omnichannel integration strengthens cumulative customer satisfaction.

Effect of PLSQ on TSS (H4)

PLSQ had a significant positive effect on TSS (β = 0.347; p < 0.001). The higher the perception of the quality of logistics services, the greater the satisfaction with specific transactions. These results are consistent with Sann et al. (2024) who affirm that aspects of logistics services such as speed of response and effectiveness of problem solving contribute significantly to customer satisfaction.

Effect of PLSQ on CUS (H5)

PLSQ had a significant positive effect on CUS (β = 0.357; p = 0.002). Consistent quality of logistics services builds long-term satisfaction. These findings are in line with Prassida and Hsu (2022) who emphasize that logistics dimensions such as timeliness and product availability affect cumulative customer satisfaction.

Effect of TSS on CUS (H6)

TSS had a significant positive effect on CUS (β = 0.122; p = 0.021). Specific transaction satisfaction contributes to forming cumulative satisfaction. This result is in line with Keiningham

et al. (2014) who stated that cumulative satisfaction is an aggregation of various transaction experiences, with greater weight of influence given to the most satisfactory recent experience.

Effect of TSS on RPI (H7)

TSS had a significant positive effect on RPI ($\beta = 0.475$; $p < 0.001$), which was the strongest predictor of repurchase intention. The higher the satisfaction of a specific transaction, the stronger the repurchase intention. These findings are supported by Ji and Prentice (2021) who found a significant role in specific transaction satisfaction in shaping customer loyalty, especially in the hospitality industry such as casino resorts.

The highest path coefficient (0.475) indicates that a satisfactory transaction experience has a direct and strong impact on customers' positive behavior intentions. This indicates that DHL needs to maintain and improve the quality of every transaction interaction to ensure long-term customer loyalty.

Effect of CUS on RPI (H8)

CUS had a significant positive effect on RPI ($\beta = 0.309$; $p < 0.001$). High cumulative satisfaction drives strong repurchase intent. These results are consistent with Hui et al. (2025) who show a significant influence of customer satisfaction on repurchase intent in the context of e-commerce.

Although the CUS coefficient to RPI (0.309) is lower than TSS to RPI (0.475), it still shows a substantial contribution. This implies that a thorough evaluation of customer experience plays an important role in the formation of repeat intent, but the most recent transaction experience has a more dominant influence.

Mediation Test Results

The results of the analysis of specific indirect effects showed that four out of five mediation pathways were statistically significant. The strongest mediating pathway was PCIQ → TSS → RPI ($\beta = 0.192$; $t = 4.465$), followed by PLSQ → TSS → RPI ($\beta = 0.165$; $t = 3.947$). This confirms that TSS plays an effective mediator in bridging the influence of service quality perception on repurchase intentions.

Mediation via CUS also showed significance, with the PCIQ pathway → CUS → RPI ($\beta = 0.116$; $t = 2.766$) and PLSQ → CUS → RPI ($\beta = 0.110$; $t = 3.067$). However, the TSS pathway → CUS → RPI were not statistically significant ($\beta = 0.038$; $p = 0.064$), indicating that the indirect influence of specific transaction satisfaction on repurchase intent through cumulative satisfaction was not statistically strong enough.

Moderation Test Results (H9 and H10)

Both moderation hypotheses were rejected because there was no significant difference between the BOPS (Book Online Drop Off at Service Point) and BSSD (Book at Service Point Ship Direct) groups.

Hypothesis H9: The effect of PCIQ on TSS in the BOPS vs BSSD group showed a very small difference (0.003) with a p-value of 0.487 > 0.05. This indicates that hybrid service types do not moderate the relationship between the perception of channel integration quality and satisfaction of specific transactions.

Hypothesis H10: The effect of PLSQ on TSS in the BSSD vs BOPS group showed a difference of 0.025 with a p-value of 0.393 > 0.05. These results show that the type of service does not provide a significant moderation effect on the relationship between the perception of logistics service quality and satisfaction of specific transactions.

These findings demonstrate the consistency of customer experience across different types of DHL Express services. Both customers who use BOPS and BSSD services respond to the quality of channel integration and logistics services with a relatively similar pattern. This indicates that DHL has succeeded in creating consistent service standards across different service delivery modes.

CONCLUSION

This study confirms that in an omnichannel logistics environment, both the quality of channel integration and the quality of logistics services play an important role in building customer satisfaction and repurchase intent. The strongest relationship found was between perceived logistics service quality and perceived channel integration quality ($\beta = 0.704$), emphasizing that logistics performance serves as the foundation for successful omnichannel integration. Transaction-specific satisfaction emerged as the most influential predictor of repurchase intention ($\beta = 0.475$), highlighting the importance of individual transaction experiences in building customer loyalty. This research provides valuable insights for logistics service providers in optimizing their omnichannel strategies. Companies should focus on improving service reliability, delivery accuracy, and real-time information transparency while ensuring seamless integration across service channels. Future research should consider expanding geographic coverage and include additional variables such as customer engagement, perceived value, or service recovery to enrich theoretical understanding of the formation of customer loyalty in logistics services.

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