



## Determinant of Customer Loyalty and Its Impact on Switching Cost: The Study of Freight Forwarding Market in Thailand

### ปัจจัยในการกำหนดความภักดีของลูกค้าและผลกระทบต่อต้นทุนในการตัดสินใจ ที่จะเปลี่ยนจากผู้ให้บริการรายเดิม: การศึกษาตลาดขนส่งสินค้าในประเทศไทย

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#### บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อตรวจสอบอิทธิพลของคุณภาพในการให้บริการด้านโลจิสติกส์ (LSQ) และการบริหารลูกค้าสัมพันธ์ (CRM) ที่ส่งผลให้เกิดความจงรักภักดีของลูกค้า และต้นทุนในการตัดสินใจที่จะเปลี่ยนจากผู้ให้บริการรายเดิมไปสู่ผู้ให้บริการรายอื่น วิธีการดำเนินการวิจัยใช้วิธีวิจัยเชิงปริมาณโดยการทำแบบสอบถามกับลูกค้าในธุรกิจของบริษัทขนส่งสินค้าระหว่างประเทศในประเทศไทย จำนวน 228 ราย และใช้การวิเคราะห์การถดถอยเชิงเส้นพหุคูณ และการใช้โมเดลสมการโครงสร้าง ผลการวิจัยพบว่า ความภักดีของลูกค้าในตลาดผู้รับจัดการขนส่งสินค้าระหว่างประเทศมีนัยสำคัญต่อต้นทุนในการตัดสินใจที่จะเปลี่ยนจากผู้ให้บริการรายเดิม ในทุกประเด็นทั้งในแง่ของต้นทุนการดำเนินงาน ต้นทุนทางการเงิน และต้นทุนด้านความสัมพันธ์ ซึ่งผลการวิจัยพบว่า ความภักดีของลูกค้ามีผลกระทบมากที่สุดต่อการตัดสินใจที่จะเปลี่ยนจากผู้ให้บริการรายเดิมในด้านต้นทุนการดำเนินงาน รองลงมาคือ ต้นทุนทางการเงินและต้นทุนด้านความสัมพันธ์ตามลำดับ นอกจากนี้การศึกษาคุณภาพการให้บริการด้านโลจิสติกส์และการบริหารลูกค้าสัมพันธ์ แสดงให้เห็นว่าการจัดการความรู้เกี่ยวกับลูกค้าของผู้ให้บริการ ซึ่งเป็นองค์ประกอบของการบริหารลูกค้าสัมพันธ์ มีผลกระทบมากที่สุดต่อความภักดีของลูกค้า รองลงมาคือคุณภาพการบริการด้านผลผลิตโลจิสติกส์ คุณภาพด้านกระบวนการโลจิสติกส์ และคุณภาพด้านความสามารถ รวมถึงองค์ประกอบอื่นๆ ของการบริหารลูกค้าสัมพันธ์ เช่น การใช้เทคโนโลยีสารสนเทศ มีอิทธิพลต่อความภักดีของลูกค้าตามลำดับ โดยประโยชน์ที่ได้จากการวิจัยนี้ เพื่อเป็นแนวทางในการสร้างและรักษาความจงรักภักดีของลูกค้าบริการขนส่งสินค้าระหว่างประเทศในประเทศไทย โดยการให้ความสำคัญกับการบริหารลูกค้าสัมพันธ์และปรับปรุงคุณภาพการดำเนินงานของธุรกิจรับจัดการขนส่งสินค้าระหว่างประเทศอย่างต่อเนื่อง ซึ่งจะมีผลต่อต้นทุนในการตัดสินใจที่จะเปลี่ยนจากผู้ให้บริการรายเดิมไปสู่ผู้ให้บริการรายอื่น เป็นการสร้างฐานลูกค้า สามารถทำให้ผู้ให้บริการสามารถเติบโตได้อย่างมั่นคงและยั่งยืน

**คำสำคัญ :** การทำการตลาดระหว่างธุรกิจกับธุรกิจ ; คุณภาพการบริการโลจิสติกส์ ; การจัดการลูกค้าสัมพันธ์ ; ความภักดีของลูกค้า ; ต้นทุนในการตัดสินใจที่จะเปลี่ยน

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## ABSTRACT

The objectives of this research were to examine the influence of logistics service quality (LSQ) and customer relationship management (CRM) that affect customer loyalty and the switching cost. The research was conducted using a quantitative method using questionnaire with 228 international shipper companies in Thailand and using linear regression analysis and structural equation modelling (SME). The results indicated that the customer loyalty in the freight forwarder market significantly influenced towards the switching cost in terms of procedure cost, financial cost, and relational cost. This study found that customer loyalty highly affected the switching cost in the aspect of procedure costs, followed by financial cost, and relational cost, respectively. In addition, the study of LSQ and CRM indicated that customer knowledge management (CM) as an element of CRM highly affected customer loyalty (CL), followed by LSQ in terms of logistics output quality (OC), logistics process quality (PQ), and capability quality (CQ), as well as other elements of CRM such as IT usability (IT) significantly affected customer loyalty respectively. The contribution of this research is that the result can be used as a guideline in creating and keeping customer loyalty in the Thai freight market through emphasizing on CRM and LSQ of international shipper companies continuously, which will affect the switching costs in order to create a strong customer base for sustainable business growth.

**Keywords :** Business-to-business (B2B) Marketing ; Logistics Service Quality (LSQ) ; Customer Relationship Management (CRM) ; Customer Loyalty ; Switching Costs

## Introduction

The freight forwarding market involves services offered for the international movement of goods through single or multiple carriers across borders. Freight forwarders are those who provide logistics planning ranging from transportation, warehousing, packaging and documentation, insurance, and other value-added services, cooperating, and facilitating shipment with their experts for negotiations of freight rates, customs documentation, tracking of shipments, as well as freight consolidations (The Business Research Company, 2022). Among different choices of freight forwarding services, logistics models, transportation modes, types of customers, and applications, this study is to focus on ocean freight forwarding for cargo shipment as the third-party logistics service provider to serve business customers across the industries such as manufacturing, retail, foods and beverages in the Thai market. In Thailand, the world's freight forwarding market is projected to experience positive growth from about USD 180 billion in the prior year to USD 191 billion for annual growth of 6.1%, given the positive sign of economic recovery from the Covid-19 pandemic. Global Logistics Market Insight Report (2022) revealed that the freight forwarding market is expected to reach USD 220 billion in 2026, in which the growth of international trade volumes will drive the demand for freight forwarding services.

In Thailand, the freight forwarding market is considered highly competitive with a large number of international and local freight companies operating in the market, particularly in the segment of the ocean freight market. Freight forwarding companies thus put their efforts to offer a range of services and the lowest



prices to attract business customers (Thai Freight Forwarders Association, 2022). However, traditional price and promotional strategies cannot contribute to long-term performance, as suggested by Lee and Charles, (2021). Shin, Park and Park (2019) pointed out that long-term relationships and mutual benefits between suppliers and customers can lead to more sustainable outcomes. In addition, the B2B freight market also often involves complicated requirements, personalized solutions, and active participation in knowledge sharing rather than accepting standard services (Coletta, Vainieri, Noto and Murante, 2021). The provision of value-added services and specialization of freight forwarding services has forced freight forwarding companies to reposition themselves to become third-party logistics (TPLs) and engage in relationship-based selling to build long-term relationships and retain their customers (Mathauer and Hofmann 2019).

As per Sulaiman et al (2021) recommendation, companies are compelled to focus on fostering customer loyalty in order to attain continued and elevated levels of profitability. This means that a firm's success is contingent on its ability to establish and preserve positive relationships with its customers. Previous research revealed that customer loyalty in the context of B2B market is driven by customer's experiences toward the product or service in which those who are satisfied with the experience derived are more likely to be loyal to a given firm (Raouf, 2018 ; Quynh, Ngo, Nha, and Gi-Du, 2018). In addition, CRM implementation was found to strongly and directly relate with relationship marketing in order to create customer loyalty (Mulyana, 2020). This study thus integrates the model of Logistics Service Quality (LSQ) and Customer Relationship Management (CRM) to investigate their influence on customer loyalty and switching cost as its by-product. However, there has been limited research to examine the influence of both LSQ and CRM on customer loyalty in the freight forwarding market. The aim of this study thus is to address the aforementioned research gap and make a valuable contribution to refining or creating strategies that can boost customer loyalty in the freight forwarding market.

### **Objective**

The research objective was to investigate the influence of Logistics Service Quality (LSQ) and Customer Relationship Management (CRM) on customer loyalty and its further implications on the perceived switching cost.

## **Literature Review**

### **Logistics Service Quality (LSQ)**

Service quality refers to the evaluation of customers about the service's overall excellence in which the five dimensions of service quality under Parasuraman et al. (1988)'s SERVQUAL model including reliability, responsiveness, assurance, empathy, and tangibility, as cited in Sohn, Woo, and Kim (2017). SERVQUAL has been widely accepted and applied to measure service quality across the service industries. In the context of the logistics industry, the SERVQUAL model into Logistics Service Quality (LSQ) scales with nine dimensions, comprising of information quality, order procedure, order release quantity, timeliness, order accuracy, order quality, order condition, order discrepancy handling, and personnel contact quality, which are categorized into three groups of quality including logistics outcome quality, logistics process



quality, and capability quality (Ali, Melkonyan, Noche and Gruchmann, 2021). Sohn, Woo and Kim (2017) proposed LSQ model with twelve dimensions under the three major attributes of LSQ, comprising of logistics outcome quality, logistics process quality, and logistic capability quality. Logistic outcome quality is measured by service quality dimensions such as reliable delivery, condition of delivered products, logistics cost reduction, and lead time. Logistics process quality is measured by service quality dimensions such as accident management, visibility, and customer responsiveness. Finally, logistics capability quality is measured by service quality dimensions such as order management capability, IT capability, organizational specialization, and organizational reputation (Sohn, Woo and Kim, 2017).

This study applied LSQ scales used in the study of Sohn, Woo and Kim (2017) in regard to its comprehensiveness and applicable with the context of freight forwarding market.

Previous researches demonstrated that customer loyalty in the context of B2B market is driven by customer's experiences toward the product or service in which those who are satisfied with the experience derived are more likely to be loyal to a given firm (Raouf, 2018 ; Quynh, Ngo, Nha, and Gi-Du, 2018). The study of Huma, Ahmed, Ikram and Khawaja (2019) confirmed that logistics service quality significantly leads to customer satisfaction and customer loyalty, but each attribute under LSQ model is not equally important. Kilibarda, Andrejić and Popović (2020) added that LSQ is the most important predictor of TPLs selection involving the perceptions of shippers on logistics service experiences on LSQ's attributes as multi-dimensional factors. The study of Wenninger Rau and Röglinger (2022) applied Kano's theory of attractive quality and found that different attributes of LSQ involve with different roles in satisfying the customers. The study of Atombo and Wemegah (2021) indicated that logistics service speed is the most important predictor of the satisfied service experience of customers. The study of Ali, Melkonyan, Noche and Gruchmann, (2021) also indicated that there is a positive association between LSQ and CL. Simanjuntak, Putri, Yuliati and Sabri (2020) confirmed the impact of LSQ on customer retention. This study, therefore, hypothesizes that there is a significant relationship between LSQ and CL.

H1a: Logistics outcome quality significantly affects customer loyalty.

H1b: Logistics process quality significantly affects customer loyalty.

H1c: Logistics capability quality significantly affects customer loyalty.

### **Customer Relationship Management (CRM)**

Customer Relationship Management (CRM) has been recognized and applied across industries in both B2C and B2B markets in order to attract and interact with customers, which is explained in the context of marketing as an important strategy with the adoption of IT technology facilitating the process of data mining for creating, maintaining, and enhancing the relations with firm's key customers (Srivastava, Chandra and Srivastava, 2019). Based on the resource-based view of competitive advantage, AlQershi, Mokhtar, and Abas (2020). described the firm's CRM capability and service quality as a moderator between firm's customer orientation and organizational performance. The study of Choi, Chung and Young (2019) examined the association between customer relationship quality and a firm's CRM capability and found that the firm's customer relationship performance is strongly related to customer information quality, which leads to



organizational performance. The study of Guenther and Guenther (2019) argued that customer relationship in the context of the B2B market in the service sector is different from that of the B2C market as it is based primarily on product-oriented rather than customer-oriented strategy, in which they proposed four dimensions of CRM capability including resources commitment, development of product knowledge, customer-oriented behaviours, and personalization of services. The study of Bin-Nashwan and Hassan (2017) investigated the implications of CRM and revealed that a firm's CRM significantly contributes to in-depth customer knowledge, which also improves customer satisfaction and customer loyalty.

In measuring CRM capability, Soltani, Zareie, Milani and Navimipour (2018) identified the key factors affecting the success of a firm's CRM strategy and found that customer orientation, organizational capability, IT use, and customer knowledge management are predictors of successful CRM. Customer orientation refers to the extent how which the firm is able to understand and fulfill the wants and needs of customers for creating good relations; organizational capability refers to a combination of the firm's complementary assets, routines, and competencies; IT use refers to the firm's expertise in using IT for CRM implementation, utilization of strategy, and buy-in composites; and customer knowledge management refers to the firm's knowledge, processes, and tools used for gathering, storing, organizing, accessing and retrieving, and analysing customer information to achieve the marketing or business goals such as sales growth, customer retention, and customer engagement.

Tifliyah, Rohman and Noermijati (2021) explored the impact of CRM on customer retention and customer loyalty. The results indicated that effective CRM, driven by the commitment and vision of the management, is a key success factor in promoting customer loyalty and enhancing firm performance. Similarly, Moudud-UL-Huq, Akter, Mahmud and Hasan, N. (2021) research found that CRM-engaged firms experienced the enhancement of customer retention and loyalty. Almohaimmeed (2019) also supported the positive impact of CRM on customer satisfaction and loyalty, highlighting its effectiveness as a tool for interacting with customers and promoting their engagement. They noted that while improving customer satisfaction is the fastest expected outcome of CRM for firms, building customer engagement and loyalty is expected in the longer term.

In this study, four dimensions of CRM as proposed in the study of Soltani et al (2018) were applied to measure the CRM implementation of freight forwarding companies in regard to its applicable concept and conditions in the freight forwarding market. This study, therefore, hypothesizes that there is a significant relationship between CRM and CL.

H2a: Customer orientation significantly affects customer loyalty.

H2b: Organizational capability significantly affects customer loyalty.

H2c: IT use significantly affects customer loyalty.

H2d: Customer knowledge management significantly affects customer loyalty.

### **Customer Loyalty (CL)**

Customer loyalty is the marketing goal of all firms, in which gaining customer loyalty in the B2B market is to retain the customer base with the desire of them to keep doing business with a particular



supplier rather than other suppliers in the consideration (Gunawan, 2022). Following the suggestion of Ilyas, Rahmi, Tamsah, Munir and Putra (2020) that customer loyalty plays a significant role as a trigger for repurchasing decisions, selling for a larger volume, and reducing price sensitivity. Mariani and Borghi (2019) added that firms put their efforts to create customer loyalty in order to enhance their competitiveness in the marketplace by trying to create switching costs. Similarly, the study of Kaswengi and Lambey-Checchin (2019) confirmed that loyal customers are likely to spend more, be less price sensitive or even willing to pay a premium price, and high level of perceived switching costs. This study, therefore, hypothesizes that there is a significant relationship between CL and perceived switching costs.

### Switching Cost (SC)

According to Nguyen, Pham, Tran and Pham (2020) switching cost refers to any factor that makes it harder or more expensive for customers to change service providers. Tucker (2019) defined switching costs as various costs that customers incur when they switch service providers. Preventing customers from switching to a competitor's product or service is generally referred to as creating switching. It is simply the perception of the customer toward the additional cost of ending the existing relationship and starting a new one. These perceived costs discourage customers from switching to a different seller or brand. Switching costs can also be understood as the direct costs that customers associate with the process of changing their existing relationship with a new one (Nguyen, Pham, Tran and Pham, 2020). These costs create a burden on customers to continue the existing relationship even if they are dissatisfied, as they perceive the current relationship as more beneficial than switching (Libai, Bart, Gensler, Hofacker, Kaplan, Kötterheinrich and Kroll, 2020). Nguyen, Pham, Tran and Pham, (2020) broadly classify switching costs into three elements, consisting of procedural costs such as economic risk, evaluation, learning, and setup costs, financial costs such as quantifiable monetary costs, and relational switching costs such as the loss of brand relationship and breaking of social bonds. Previous studies revealed that loyal customers are likely to purchase with greater volume, resist competitive offerings, and have less cost to retain. In other words, it implied that switching costs is a by-product of customer loyalty. This study, therefore, hypothesizes that

H3a: Customer loyalty significantly affects the procedure cost of switching.

H3b: Customer loyalty significantly affects the financial cost of switching.

H3c: Customer loyalty significantly affects the relational cost of switching.

### Conceptual Framework

The research framework was developed as an extension of previous research for the enhancement of customer loyalty in the freight forwarding market through the systematic integrating of ideas stemming from relevant studies into generalized themes, as seen in the Figure 1.

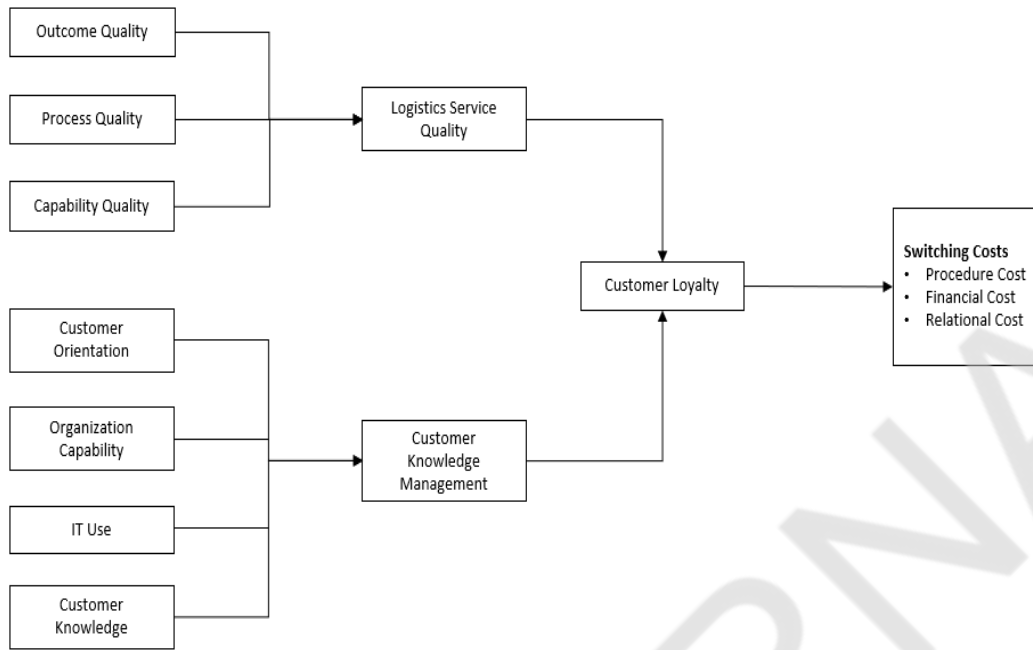


Figure 1 Conceptual Framework

## Research Methodology

### Populations and Samples

The study was conducted to target firms that were business customers of freight forwarding companies in Thailand. The sampling was narrowed to business customers of freight forwarding services in Bangkok metropolitan areas. Stratification sampling was used to reach the target firms with uniform representativeness of business customers of freight forwarding companies including high-positioned employees in freight forwarding services in Bangkok by using screening questions in the questionnaire for the first phase, and convenience sampling was applied to conduct the research within the available time. The sample size involved with 228 samples in regard to cost and time, as well as precision; whereas the size of 100 samples is recommended for most research situations, but the larger size is better in concerning data outliers (Hair et al., 2018).

There was a total of 250 sets of data received from the online questionnaires. All responses were invited to participate in this study by email, but only 228 were valid because 32 of them included missing values.

### Research Instruments

A questionnaire with a five-point Likert scale rating matrix with “5” indicating “strongly agree” and “1” indicating “strongly disagree”. A measurement was developed by Raouf (2018), Sohn and Kim (2017), and Soltani et al (2018), and reliability testing was conducted by using Cronbach’s alpha coefficient is used to measure the questionnaire’s reliability greater than 0.7 is interpreted that the questionnaire is reliable.



### Data Collection

The data collection method relied on the online self-administered questionnaire, which has been widely recognized and applied in market research where the information is gathered through questions (Astous, 2005). All the respondents were those who were responsible for selecting and booking orders with the freight forwarder in their organization. They were considered as a decision maker in the organization that met the context of this study.

### Data Analysis

The data analysis used Multiple linear regression analysis, and simple linear regression analysis were used for the statistical analysis of this study on IBM SPSS V.28.

## Results and Discussion

The data was collected from 228 respondents who were responsible for selecting the freight forwarder for their organization. The majority of respondents were in manufacturing companies (62%), followed by retailing and wholesaling companies (24%), transportation companies (7%), and warehousing companies (7%), respectively. Average shipment volumes through freight forwarders of them ranged from less than 20 containers per month to over 100 containers per month. Of which, 29.5% of them shipped about 51-100 containers per month; 27% of them shipped over 100 containers per month; 24.5% of them shipped about 20-50 containers per month; and the remaining 19% of them shipped less than 20 containers per month as Table 1.

**Table 1** Respondents' Organizational Characteristics

Items	Category	Frequency	Percentage
Key Business Activity	Manufacturing	124	62.0
	Transportation service	14	7.0
	Warehousing	14	7.0
	Retailing / Wholesaling	48	24.0
Average Monthly Shipment	< 20 containers	38	19.0
	20 -50 containers	49	24.5
	51 – 100 containers	59	29.5
	> 100 containers	54	27.0

Multiple linear regression analysis (MLR) was the statistical method for examining the influence of LSQ's dimensions including outcome quality (OQ), process quality (PQ), and capability quality (CQ) on customer loyalty (CL) in the freight forwarding market; and the influence of CRM's factors including customer orientation (CO), organizational capability (OC), IT use (IT), and customer knowledge management (CM) on customer loyalty. The results of MLR analysis are demonstrated in the Table 2 and 3 below.



**Table 2** MLR Analysis of LSQ's Dimensions on CL

Model	B	SE	Beta	t	Sig
(Constant)	.12	.26	-	.44	.66
OQ→CL	.30	.11	.25	2.75	.00
PQ→CL	.29	.11	.27	2.67	.00
CQ→CL	.29	.09	.23	2.91	.00
<b>Adjusted R square = .48; F = 62.96</b>					

From the Table 2, the results revealed that LSQ's dimensions including those of outcome quality (OQ), process quality (PQ), and capability quality (CQ) can collectively explain customer loyalty in the business freight market by 48.3%, in which other factors contributed for another 51.7%. The results indicated that logistics outcome quality significantly affects customer loyalty ( $p < .05$ ,  $\beta = .26$ ) with the positive influence; logistics process quality significantly affects customer loyalty ( $p < .05$ ,  $\beta = .27$ ) with the positive influence; and logistics capability quality significantly affects customer loyalty ( $p < .05$ ,  $\beta = .24$ ) with the positive influence. Hence, hypotheses H1a, H1b, and H1c were accepted. Among these three dimensions of LSQ, process quality has the strongest impact on customer loyalty, followed by outcome quality, and capability quality, respectively.

**Table 3** MLR Analysis of CRM's Factors on CL

Model	B	SE	Beta	t	Sig
(Constant)	.14	.25	-	.54	.59
CO→CL	.10	.20	.10	.48	.63
OC→CL	.046	.21	.04	.22	.83
IT→CL	.26	.063	.27	4.13	.00
CM→CL	.46	.078	.40	5.93	.00
<b>Adjusted R square = .48; F = 47.49</b>					

From the Table 3, the results indicated that CRM's factors including those of customer orientation (CO), organizational capability (OC), IT use (IT), and customer knowledge management (CM) can collectively explain customer loyalty in the business freight market by 44.3%, in which other factors contributed for another 55.7%. The results indicated that IT use significantly affects customer loyalty ( $p < .05$ ,  $\beta = .27$ ) with a positive influence; and customer knowledge management significantly affects customer loyalty ( $p < .05$ ,  $\beta = .48$ ) with a positive influence. Customer orientation (CO) and organizational capability (OC) have no significant influence on customer loyalty ( $p > .05$ ). Regarding this, only hypotheses H2c and H2d were accepted. Among these two factors of CRM, customer knowledge management has a stronger impact on customer loyalty and of IT use.

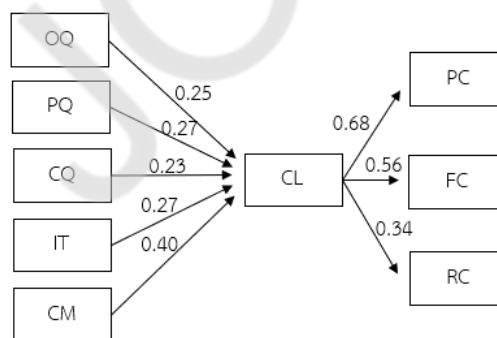


Simple linear regression analysis (SLR) was further applied to investigate the influence of customer loyalty (CL) in the freight forwarding market on the three dimensions of switching costs, including procedure cost (PC), financial cost (FC), and relational cost (RC). The results of SLR analysis are demonstrated in the Table 4 below.

**Table 4** SLR Analysis of CL on Switching Cost' Dimensions

Model	B	SE	Beta	t	Sig
(Constant)	1.18	.21		5.54	.00
CL→PC	.75	.06	.68	12.96	.00
(Constant)	1.34	.21		6.25	.00
CL→FC	.55	.05	.56	9.48	.00
(Constant)	2.83	.24		11.69	.00
CL→RC	.33	.06	.34	5.04	.00

From Table 4, the results indicated that customer loyalty significantly affects the procedure cost of switching ( $p < .05$ ,  $\beta = .68$ ) with the positive influence; customer loyalty significantly affects the financial cost of switching ( $p < .05$ ,  $\beta = .56$ ) with the positive influence; and customer loyalty significantly affects the relational cost of switching ( $p < .05$ ,  $\beta = .33$ ) with the positive influence. Hence, hypotheses H3a, H3b, and H3c were accepted. Among these three dimensions of switching costs, customer loyalty has the strongest impact on the procedure cost, followed by the financial cost, and relational cost of switching.



**Figure 2** SEM Analysis of the Model

**Table 5** Summary of Hypothesis Testing

Hypothesis	Result
H1a: Logistics outcome quality significantly affects customer loyalty.	Accept
H1b: Logistics process quality significantly affects customer loyalty.	Accept
H1c: Logistics capability quality significantly affects customer loyalty.	Accept
H2a: Customer orientation significantly affects customer loyalty.	Reject
H2b: Organizational capability significantly affects customer loyalty.	Reject
H2c: IT use significantly affects customer loyalty.	Accept
H2d: Customer knowledge management significantly affects customer loyalty.	Accept
H3a: Customer loyalty significantly affects the procedure cost of switching.	Accept
H3b: Customer loyalty significantly affects the financial cost of switching.	Accept
H3c: Customer loyalty significantly affects the relational cost of switching.	Accept

The results proved the suggestion of Mathauer and Hofmann (2019) who stated that logistics service quality significantly leads to customer loyalty, but each attribute under LSQ model is not equally important. In the context of the freight forwarding market in Thailand, this study proposes that process quality has the strongest impact on customer loyalty, followed by the outcome quality, and capability quality, respectively. The results are also consistent with the study of Simanjuntak et al (2020) and that of Cotarelo, Calderón and Fayos (2021) which suggested that different attributes of LSQ involve different roles in satisfying the customers. Regarding the significance of CRM, the results of this study are also aligned with the study of Özkan, Süer, Keser and Kocakoç (2020) which examined the association between customer relationship quality and the firm's CRM capability and found that the firm's customer relationship performance is strongly related with customer information quality, which leads to organizational performance. The study Bin-Nashwan and Hassan (2017) examined the implications of CRM and revealed that a firm's CRM significantly contributes to in-depth customer knowledge, which improves customer satisfaction and customer loyalty was also proved by the findings. Further, the suggestion of Mariani and Borghi (2019) which stated that firms put their efforts to create customer loyalty in order to create switching costs was proved in the context of the freight forwarding market in Thailand. Similarly, the study of Rawis et al. (2022) was also confirmed that loyal customers are likely to have a high level of perceived switching costs. In addition, the results of this study propose that CL has the strongest impact on the perceived procedure cost of switching, followed by the financial cost and relational cost of switching.

## Conclusions

The research aims to examine the influence of LSQ and CRM that affect customer loyalty and further impact on the switching cost. The research was conducted using a quantitative questionnaire with 228 international shipper companies in Thailand and using Linear Regression analysis and structural equation modeling (SEM). The results indicated that customer loyalty in the freight forwarder market significantly



influenced the switching cost in terms of procedure cost, financial cost, and relational cost. This study suggested that customer loyalty has the strongest impact on the perceived procedure costs, followed by financial cost, and relational cost, respectively. In addition, the study of LSQ and CRM suggests that customer knowledge management (CM) as an element of CRM has the strongest impact on customer loyalty (CL), followed by LSQ in terms of logistics output quality (OC), logistics process quality (PQ), and capability quality (CQ), as well as other elements of CRM including IT usability (IT), customer orientation (CO), and organizational capabilities (OC) that significantly affects customer loyal by the descending order of importance. The contribution of this research thus can be used as a guideline in creating and maintaining customer loyalty in the Thai freight market through emphasizing the strategies of CRM and LSQ on a continuous basis, which in turn leads to switching costs. Hence, freight forwarding companies are able to create a strong customer base for sustainable business growth.

### Contribution

This study has proposed a theoretical contribution in the form of an integrated model of service LSQ-CRM-CL-SC, which explores antecedent factors that affect customers' switching costs. The model suggests that LSQ and CRM have an impact on CL, which then affects SC. In the context of freight forwarding, this study found that three components of LSQ, namely Logistics outcome quality, Logistic process quality, and Logistic capability quality, have a significant impact on CL. Additionally, the study revealed that IT use and customer knowledge management, which is part of CRM, significantly affect customer loyalty in the freight forwarding service industry. The results indicate that customer loyalty plays a significant role in influencing switching costs, specifically in terms of procedure cost, financial cost, and relational cost.

For practical contributions, the results suggested that freight forwarders can enhance customer loyalty by focusing on continuous improvement of logistics service quality. The high level of LSQ will differentiate freight forwarders away from competitors by creating switching costs in the mind of customers. Freight forwarders can further enhance customer loyalty through effective CRM strategies, focusing on customer knowledge management and IT use.

### Suggestions

From the research results, can be made suggestions as follows:

1. Freight forwarders are required to have reliable delivery, good condition of delivered products, solutions for cost reduction, and appropriate lead time in order to improve logistic outcome quality. They should have effective processes of accident management, visibility, and customer responsiveness in order to improve logistics process quality. In addition, freight forwarders need to focus on order management capability, IT capability, organizational specialization, and organizational reputation in order to improve logistics capability quality

2. The results implies that freight forwarder should make a greater effort to identify the needs of their customers and provide more personalized services tailored to each individual customer. This can be achieved through the adoption of digital technology to obtain and manage "real-time" customer

information and feedback. It is recommended that freight forwarders have a dedicated CRM technology in place to facilitate 24/7 one-to-one communication with customers.

### Limitations

The scope of this study was limited to the Thai freight forwarding market, which means that the findings may not be generalizable to other markets with different cultural backgrounds. Therefore, future research is recommended to explore other markets and compare the results across different regions. Additionally, it would be beneficial to examine the customers based on their industries.

This study focused on the impact of LSQ and CRM on customer loyalty, as well as their further impact on switching costs. However, definitions and concepts of these variables may change over time, so future research should review and update the definitions and concepts accordingly.

This study was limited to quantitative research and thus has certain limitations. Therefore, it is recommended that future research use a mixed methodological approach to overcome the limitations of quantitative research.

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