

# The Determinants of Online Seller Loyalty in Express Delivery Service Providers

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**Abstract.** The service quality of delivery service companies is a significant factor in creating online seller loyalty; especially consumers demand that online sellers offer trusted and reliable delivery services. Customer experience is essential information for delivery service providers and online sellers. This study examines the determinants of seller loyalty based on perceived service quality when dealing with delivery service providers. In the survey, as many as 280 sellers were involved voluntarily, and they were randomly selected. The questionnaires were distributed online through a chat service provided by the e-commerce platform. Then, the survey results were analyzed using the PLS-SEM technique to answer the research hypothesis. As a result, all dimensions of service quality, including reliability, visual identification, relational capital, responsiveness, and technical quality, positively and significantly affect online seller loyalty. Technical quality is the main factor in forming seller loyalty to delivery service providers.

## 1 Introduction

In the logistics sector, delivery services are a particular service in the logistics supply chain [1]. The Indonesian Logistics Association (ALI) noted that the flow of goods shipments grew by 40% during the Covid-19 pandemic. This increase was contributed by the pharmaceutical industry, medical devices, and consumer goods [2]. Specifically for consumer goods, consumers rely on e-commerce because goods are sent directly through couriers from delivery service providers. Therefore, the logistics business is projected to grow significantly due to demand during the pandemic and social restrictions; consumers switch to online shopping [3]. The recorded number of e-commerce transactions reached Rp.401 trillion during 2021 [4]. This condition makes it clear that the logistics sector in Indonesia has experienced a significant increase and has contributed to the growth of digital economy turnover.

In online shopping activities, delivery services are a determinant of customer satisfaction and future intentions to cooperate and impact the success of electronic retailers [5]. In online transactions, customers expect ease of delivery of goods. They want a service that fits their needs. Considering this condition, delivery service providers offer to cooperate with e-commerce. They offer several delivery options, real-time information, reschedule, and same-day delivery. This choice is considered by customers when transacting retail goods in e-commerce [6].

Shipping is still the biggest challenge facing e-commerce. iPrice Group, together with Parcel Perform

in 2019, surveyed consumers in Malaysia, Singapore, Indonesia, Vietnam, and Thailand. As a result, 36% of consumers in Indonesia were dissatisfied with the delivery experience. More than 44.3% of customers in Indonesia filed complaints and negative responses regarding delivery delays and lack of communication about the delivery status [7]. Satisfied customers will end up being loyal. In connection with technological developments, innovation in delivery service offerings has developed into self-service. The customer determines the delivery service providers offered by the seller through their platform. Thus, they are considered the result of cooperation between the customer and the seller. Carrying the client-centric concept, customers are resources who provide information on their experiences, needs, and expectations of service quality [8, 9].

The seller plays a role in boosting the use of express delivery services on the e-commerce platform, where the seller can choose an express delivery service provider that will be activated in his online store. On the other hand, sellers must also be smart in choosing an activated delivery service provider because there are buyers who may be loyal to certain delivery services so they choose to transact at other stores that provide the particular delivery service. Consumers are certainly concerned with the quality of the services provided to be able to return to use the services. Service quality contributes to the formation of customer loyalty [10]. When service performance is higher than expectations, perceived quality is better so that consumers are satisfied and encourage customer loyalty to services [11].

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## 1.1 Objectives

Based on this phenomenon, more profound research on the perceived service quality of delivery service providers based on the seller's perspective is essential because of the significant push for e-commerce in Indonesia and technological advances in the logistics sector. Therefore, this study aims to examine the determining factors in forming online seller loyalty by paying attention to the quality-of-service delivery service providers.

## 2 Literature review

### 2.1 Service quality in delivery service providers

Rapid changes in all sectors mark the era of globalization. The service factor is essential for companies in all developed and developing countries [12]. With the rapidly growing number of companies in the service sector and the desire to meet increasingly demanding and discriminatory customer expectations, companies face pressure to ensure the quality of the services provided to remain competitive [13]. [14] explained that service quality is a more difficult thing to interpret, measure, and guarantee than the quality of manufactured goods. It is due to the intangible nature of the offering, the heterogeneity of the service, and its durability. Therefore, service quality depends on many factors that cannot be controlled [14]. In general, service quality results from evaluating the gap between expectations and perceived reality, past experiences, and expected word of mouth [15].

Most studies examine service quality from a customer perspective. However, there are still few that discuss service quality from the point of view of online sellers who collaborate with delivery service providers [6].

### 2.2 Service quality dimension

In this study, the dimensions of service delivery quality are measured from the seller's perspective. These dimensions are reliability, relational capital, responsiveness, technical quality, and visual identification [6].

The first dimension is reliability. It means the service providers' ability to perform the promised services accurately and consistently [16]. Reliability contains the most critical factors that affect the quality of courier services from the recipient's point of view, such as timeliness of delivery, successful delivery efforts, compliance, and completeness of orders, as well as lack of parcel damage, efficiency and speed of order processing [6].

The second dimension is visual identification, which is an element to create a company image such as the aesthetic and neat appearance of the courier, trademark characteristics and uniform colors, and aesthetics and

functionality of company branches or pick-up drop-offs. Furthermore, the third dimension is relational capital. These are the elements that contribute to a long-term relationship between the company and the client [17], including the client's positive experience while using the courier service, the opinions of other clients as well as trust in the courier company, positive image, and brand, experience and credibility, knowledge and competence of employees [6].

The fourth dimension is responsiveness, which relates to the company's desire to help customers and provide services immediately, handling requests, complaints, and questions quickly and attentively [18].

The last dimension is technical quality. Technical quality refers to what customers receive due to their interaction with the company [19]. In addition, the company's ability to provide a sense of security and comfort to customers for the services provided [20]. In this study, technical quality includes elements related to the material aspects of the service such as modern technical solutions dedicated to customers, including a network of pick-up and drop-off points and parcel lockers and drones, the choice to choose a delivery method, and the availability of services by providing a convenient location and operating hours [6].

### 2.3 Online seller loyalty

Customer loyalty has become the most important thing for companies. The focus is to find out the determinants or drivers of customer loyalty. Customer loyalty refers to the behavior to repurchase a product or service [21]. Other researchers also explain that implementing a loyalty strategy can increase customer retention and reduce marketing costs [22]. In this study, customer loyalty is measured from the sellers' perspective in e-commerce. It explains that the seller is the final consumer of the delivery service provider company. Previous research explained that service quality impacts customer loyalty ([16], [23-25]).

### 2.4 Hypothesis development

The quality of service from a delivery service company that matches sellers' expectations in e-commerce as their clients can strengthen long-term relationships and become the company of choice to offer to buyers as delivery services. Based on this explanation, the following hypothesis can be formulated:

H1. Reliability has a positive and significant effect on seller loyalty in e-commerce.

H2. Visual identification has a positive and significant effect on seller loyalty in e-commerce.

H3. Relational capital has a positive and significant effect on seller loyalty in e-commerce.

H4. Responsiveness has a positive and significant effect on seller loyalty in e-commerce.

H5. Technical quality has a positive and significant effect on seller loyalty in e-commerce.

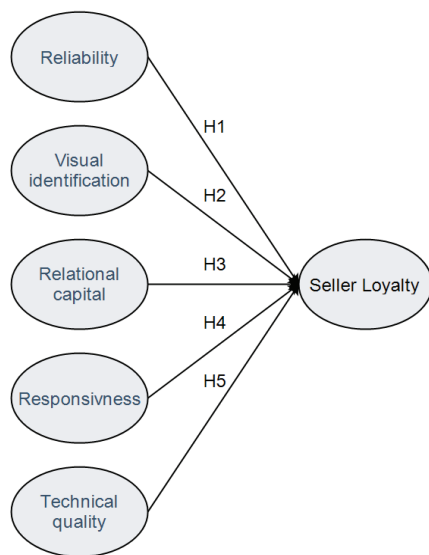


Fig. 1. Research model.

### 3 Methods

This type of research is descriptive associative, which describes the value of the research construct and examines the relationship and influence between constructs. PLS-SEM technique used to answer research hypotheses with the help of SmartPLS 3.3 software. The PLS-SEM technique consists of two measurements, namely the outer model as a measure of the goodness of the data and the inner model as hypothesis testing [26]. The size of the goodness of the data refers to the value of convergent and discriminant validity. Internal consistency refers to the value of Cronbach Alpha (CA) and Composite Reliability (CR). In addition, we are testing the inner model to prove the hypothesis and explain R<sup>2</sup> value, Q<sup>2</sup> predictive relevance, and effect size (f<sup>2</sup>).

### 4 Data collection

The population in this study is online sellers from e-commerce in Indonesia. The sample size in this study was 280 respondents, equal to 10 times the number of indicators [27] and taken randomly by sending a URL to the seller via chat services available on the e-commerce platform. The study set used was a survey because the data collected through questionnaires were carried out once without any comparison and did not manipulate the independent variables. Respondents filled out several sections consisting of a profile section and a questionnaire question section. The questionnaire consists of 5 questions regarding reliability, three questions regarding visual identification, six questions regarding relational capital, six questions regarding responsiveness, two questions regarding technical quality, which were adapted from [6], and four questions regarding customer loyalty were adapted from [16]. The collected questionnaire data, then a cleaning process is carried out to ensure the quality of the data is feasible for analysis.

## 5 Results and discussion

### 5.1 Characteristics of respondents

As many as 64% of respondents in this study are women, and the dominance of age is 21-30 years. 38% have an undergraduate education background, and 92% live on the island of Java. 35% of respondents use the JNT provider as their preferred express delivery service.

### 5.2 Outer model

Information on the results of the validity and internal consistency tests is presented in Table 1.

Table 1. Construct validity and reliability.

Constructs	Item	LF	CA	CR	AVE
Customer Loyalty	CL1	0,904	0,896	0,928	0,762
	CL2	0,885			
	CL3	0,821			
	CL4	0,881			
Reliability	R1	0,850	0,869	0,905	0,657
	R2	0,717			
	R3	0,777			
	R4	0,812			
	R5	0,887			
Relational Capital	RC1	0,777	0,878	0,908	0,621
	RC2	0,737			
	RC3	0,833			
	RC4	0,813			
	RC5	0,780			
	RC6	0,785			
Responsiveness	RS1	0,761	0,892	0,917	0,647
	RS2	0,870			
	RS3	0,799			
	RS4	0,738			
	RS5	0,854			
	RS6	0,798			
Technical Quality	TQ1	0,911	0,759	0,892	0,805
	TQ2	0,884			
Visual Identification	VI1	0,783	0,785	0,873	0,696
	VI2	0,827			
	VI3	0,891			

Note: CR = Composite Reliability; AVE = Average Variance Extracted

All data suitability tests are presented in Table 1. It proves that all measurement data have met the validity and reliability requirements because the loading factor value is > 0.7, and the CA and CR values are >0.7 [28]. It means the items measured reflect their respective constructs and can be relied upon to answer the research hypothesis.

Furthermore, the discriminant validity test used the HTMT ratio method. The measurement of discriminant validity is satisfactory if the correlation ratio between constructs is <0.9 [29]. Table 2 informs that all correlations between constructs are below 0.9 so that the discriminant validity is satisfactory.

Table 2. Heterotrait-monotrait ratio of correlations (HTMT).

	CL	R	RC	RS	TQ	VI
CL						
R	0,796					
RC	0,786	0,848				
RS	0,706	0,680	0,673			
TQ	0,884	0,646	0,718	0,771		
VI	0,739	0,698	0,690	0,531	0,704	

### 5.3 Inner model

Based on Table 3, all research hypotheses are accepted because the relationship between constructs has a significance value of less than 0.05 and a t-value > 1.96. In detail, reliability has a positive and significant effect on online seller loyalty ( $\beta_1 = 0.263$ ; T-Stats 4.345; Sig. 0.000). Visual identification positively and significantly affects online seller loyalty ( $\beta_2 = 0.148$ ; T-Stats 3.233; Sig. 0.001). Relational capital positively and significantly affect online seller loyalty ( $\beta_3 = 0.157$ ; T-Stats 2.593; Sig. 0.001). Responsiveness has a positive and significant effect on online seller loyalty ( $\beta_4 = 0.097$ ; T-Stats 1.971; Sig. 0.049). Finally, technical quality has a positive and significant effect on online seller loyalty ( $\beta_5 = 0.356$ ; T-Stats 6.137; Sig. 0.000).

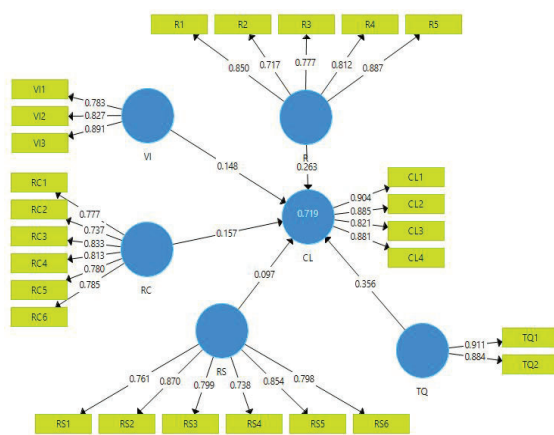


Fig. 2. Research model.

Table 3. Result of hypothesis testing.

Path	Std	T Stats	P-Values	R <sup>2</sup>	Q <sup>2</sup>	f <sup>2</sup>
R→CL	0,263	4,345	0,000	0,719	0,719	0,089
VI→CL	0,148	3,233	0,001			0,043
RC→CL	0,157	2,593	0,010			0,033
RS→CL	0,097	1,971	0,049			0,015
TQ→CL	0,356	6,137	0,000			0,217

Note: R = Reliability; CL= Customer Loyalty; VI= Std. Deviation; RC = Relational Capital; RS = Responsiveness; TQ = Technical Quality

Evaluation of the structural model refers to R<sup>2</sup>, Q<sup>2</sup>, and f<sup>2</sup>. The R<sup>2</sup> value of 0.19 is weak, 0.33 is moderate, and 0.67 is strong [26]. Based on the results of the analysis in Figure 2 and Table III, the value of R<sup>2</sup> is 0.719. These results indicate that the research model has a solid category for explaining online seller loyalty. In other words, the constructs of reliability, visual identification, relational capital, responsiveness, and technical quality contributed 71.9% form online seller loyalty.

Furthermore, Q<sup>2</sup> testing uses the Stone-Geisser method to assess the relevance of predictions from the research model. As a result, the Q<sup>2</sup> value is 0.719 and is greater than 0. It indicates that the model has good predictive relevance.

Finally, the evaluation of the structural model is the f<sup>2</sup> test. A relationship has a weak, moderate, and strong influence if the f<sup>2</sup> value is in the range 0.02 – 0.14; 0.15 – 0.34; and more significant than 0.35 [26]. The f<sup>2</sup> value

of online seller loyalty with the reliability construct is 0.089, visual identification is 0.043, relational capital is 0.033, responsiveness is 0.015, and each has a weak influence, while the technical quality construct is 0.217 it has a moderate effect.

### 5.4 Discussion

Reliability has a significant influence on online seller loyalty. The path coefficient value indicates the direction of positive influence, which means that the better the perception of reliability, the more online seller loyalty increases. The results of this study are in line with previous researchs [11, 16, 30]. Reliability is perceived as the provision of services that are provided reliably, precisely, and guaranteed to achieve customer satisfaction which then encourages the expansion of trust and loyalty to services [31]. In express delivery services, substantial factors shaping reliability are through on-time delivery services, low levels of damage to packages, and efficient and fast order handling.

Visual identification has a positive and significant effect on online seller loyalty. The path coefficient value indicates a positive direction, which means that the better the visual identification presentation, the more often online sellers use express delivery service providers. The results of this study are in line with the research of [11]. [30] also found that the physical aspect affects the formation of customer loyalty. Visual identification, which includes the appearance of the courier, the uniform used, the trademark, and the physical appearance of the business location, are factors that the company considers because they represent its image. A good corporate image can build consumer trust, which in turn makes consumers loyal to the company.

Relational capital has a positive and significant influence on online seller loyalty. The path coefficient value indicates the direction of positive influence. The better the relational capital, the more online sellers are willing to establish long-term cooperation with express delivery service providers. The results of this study are in line with [30]. In terms of service, company employees form customer perceptions through several service encounters in general. A good relationship between employees and customers can increase customer satisfaction [32]. The more consumers feel the support and attention from employees and the company, the more customer satisfaction and loyalty increases [33].

Responsiveness has a positive and significant effect on online seller loyalty. The path coefficient value shows a positive direction, which means that the better the responsiveness attitude of the delivery service providers, the better it will contribute to forming online seller loyalty. These results align with research by [34] and [35]. Responsiveness refers to the ability of service providers to respond to customer complaints quickly. When express delivery services can provide solutions that can meet customer needs, it can build customer trust to become loyal to service providers. Loyal customers may want to help service providers recommend services to other customers.

Technical quality has a positive and significant effect on online seller loyalty. The path coefficient value shows a positive direction, which means that the better the presentation of technical quality, the more it forms the online seller's attitude to be loyal. This result is in line with [36], who explained that technical quality is a strong predictor of long-term relationships that play an essential role in growing customer loyalty. Thus, express delivery services must pay attention to elements that can benefit customers, such as a network of pick-up and drop-off points and parcel lockers and drones, choosing a delivery method, and the availability of services by providing a convenient location and operating hours.

## 6 Conclusion and recommendation

Service quality is perceived through a comparison of service standards with actual services. Consumers judge good quality when the existing performance exceeds consumer expectations, resulting in satisfaction and customer loyalty. Therefore, companies need to provide the best quality service. This study concludes that reliability, visual identification, relational capital, responsiveness, and technical quality positively and significantly influence online seller loyalty in express delivery service companies. The biggest influence factor on seller loyalty is technical quality. Express delivery service companies expected to pay attention to service availability through convenient operating hours and pick-up point locations. The company's operating hours must be clear so that the seller can determine the cut-off time for wrapping and sending orders to the pickup location. Pick up point locations should also be easy to find and have a convenient area to drop off the packages to be sent. Besides, in term of other factors, Express delivery service companies are expected to minimize the risk of damage package by implementing procedures in the shipping process to put package without being thrown. The couriers who represent the company's image should wear uniforms and neat clothes, and also use company logo on attributes of delivery such as vehicles or storage. Employees are expected to build relationship with customer by giving right information about the service, sharing promo information and others. And also, the essential thing to be noted is a quick response to customer complaints where companies need to provide accessible facilities such as email contacts, cell phone numbers, or social media that can be contacted and have a fast service process.

### 6.1 Limitation and future research

This study has several limitations. Researchers focus on online seller loyalty. It should be for further research to pay attention to satisfaction before loyalty. In addition, the limited sample size can be expanded by taking into account the type of business of the online seller.

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