

THE EFFECT OF QUALITY OF SERVICE AND PRICE ON INTENTION IN USING KM. KELUD PT. PELNI PASSENGER SHIP DURING THE COVID-19 PANDEMIC

Ellisa Makna Tiara¹, Firda Azahra², Aswanti Setyawati³, Sarovah Widiawati⁴

^{1,2,3,4}Institut Transportasi & Logistik Trisakti, Jakarta, Indonesia

*Corresponding author : tiaranaffi@gmail.com

Abstract. Currently, all countries are affected by the Covid 19 Pandemic. The suspension of passenger ship operations on several routes has caused service problems where Pelni cannot serve passengers on the abolished routes. The purpose of our study is to find out the effect of price and service quality on customer purchase intention in using PT. PELNI's ships. The method used in this study was a quantitative method with a descriptive type of research. Data collection was based on primary data, namely from questionnaires, and secondary data, namely from international journals related to research topics. Data were taken from questionnaires distributed to KM.Kelud PT. PELNI passenger ship. The result shows that service quality does not affect purchase intention in using PT. PELNI during the Covid-19 Pandemic while the price does. Simultaneously, the quality of service and price together affect the customer purchase intention in using PT. PELNI during the Covid-19 pandemic.

Keywords : Covid 19, Service Quality, Price, Purchase Intention

INTRODUCTION

The Covid 19 pandemic is the spread of the Corona Virus Disease 2019 (COVID-19). Moreover, all countries are being hit by the Covid 19 Pandemic. The pandemic resulted in a decline in interest in traveling by land, air, and water modes of transportation. This change could be a result both from fear of being infected by the virus and from restrictions imposed by the government (Kim, 2021). The spread of the Covid 19 Virus has taken place in Indonesia since it was first announced in March 2020 and until now the Covid 19 virus is still spreading. Transportation has been considered as one of the mediatransmitting the disease (Wei et al., 2020), one of which is the use of passenger ships. The Passenger Ship Service Industry experienced a significant impact from the Pandemic. As per the reports of Ito, Hanaoka, and Kawasaki, it was found that large passenger ships had the highest infection rates and that ships operating on a scheduled basis also affected the infection rate (Kim, 2021).

The Ministry of Transportation (Kemenhub) of the Republic of Indonesia issued Minister of Transportation Regulation Number 18 of 2020 concerning Transportation Control in the context of Preventing the Spread of COVID-19. The regulation has regulated transportation control for all regions in Indonesia, controlling the number of transportation modes operating in designated areas and implementing Large-Scale Social Restrictions (PSBB) to public. The implementation of PSBB and New Normal in transportation modes requires transportation to operate with due regard to health protocols. The operation of passenger ships should consider limiting the number of passengers, cleaning the ship regularly, and encouraging passengers to always wear masks and maintain the distance. In line with these conditions, the number of passengers on PT. PELNI experienced a very drastic decline during the spread of the Covid 19 virus in Indonesia, precisely from 2019 to 2020. An illustration of the decline in the number of passengers can be presented below.

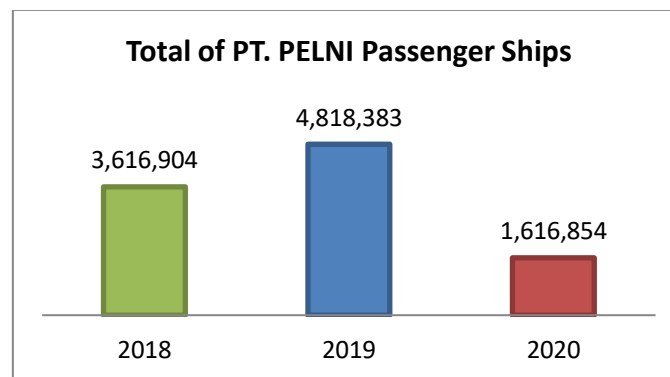


Figure 1. Total of PT. PELNI Passenger Ships

Source: PT. PELNI

In 2019, the passengers of PT. PELNI were 4,818,383 which means an increase of about 33% compared to 2018. According to the Head of the Corporate Secretariat of PT Pelni (Persero), Yahya Kuncoro, the increase in the number of customers was based on several things, including the level of service that was getting better, the ease of obtaining tickets, which could be accessed by mobile phone, an easier method of payment with a debit card, as well as a free baggage policy of being up to 40 Kg. The biggest increase in 2019 occurred on the Jakarta-Batam-Belawan route with KM Kelud (Paskalis & Nur, 2020). This increase in passengers usually occurs during the Eid holiday season, as well as Christmas and New Year.

Meanwhile in 2020, the number of passengers on the PT. PELNI experienced a drastic decline of 65% to 1,616,854 passengers. This was due to the Covid 19 pandemic and government regulations regarding operational restrictions on public transportation modes.

PT.PELNI ship ticket prices in 2018-2019 increased. Based on PT.PELNI, ship ticket for the Jakarta-Batam-Belawan route with KM. KELUD in Economy class in 2018 cost Rp.412,000,-. Meanwhile, in 2019 it increased by 2.4% to Rp.422,000,-. In 2020 the ticket

price for the KM. Kelud ship with the Jakarta-Batam-Belawan route did not rise and remained at IDR 422,000 for economy class.

The Covid 19 pandemic also disrupted the operations of PT. PELNI's ships, there were restrictions on passengers who were only allowed to carry 50% of passengers from their usual capacity. Cessation of operation of passenger ships on several routes, causing service problems where Pelni could not serve passengers on the abolished routes. The number of passenger ships and pioneer ships operating was reduced, causing service problems, namely less sailing time so that passengers could choose departure hours flexibly and the number of passengers that can be transported was reduced.

Interest in using services is influenced by customer behavior, where customer behavior is related to service quality, price advantage, and the risks faced when choosing to use certain services (Kabel et al., 2020). Factors that can attract passengers to use the ship are the quality of service onboard and also affordable ticket prices.

Previous research reveal that partially, the quality of service affects the purchase intention in use GoJek services, while the price does not affect the purchase intention in use GoJek services. Simultaneously, the quality of service and price affect the purchase intention in use Gojek services (Aptaguna & Pitaloka, 2016). Other research on the interest in buying online travel services of airline tickets shows that the quality of service (e-service quality), price and advertising are significant factors to the purchase intention . Factors that greatly contribute to purchase intention are the quality of electronic services and advertising (Nikhashemi et al., 2012). Some previous studies focused on the quality of service factors and prices that affect purchase intention. However, this study focused on the intention in using passenger ships especially KM. Kelud PT. PELNI with Jakarta-Batam-Belawan route.

Those phenomena were the triggers in researching the effect of service quality and price on purchase intention in using PT. PELNI passenger ships during the Covid-19 pandemic. The purpose of this study is to determine whether there is an effect between service quality and price on interest in using PT. PELNI ships during the Covid-19 pandemic partially or simultaneously. For theoretical purposes, the results of this study are expected to provide additional input and information for the development of existing marine transportation business sciences. For managerial purposes, the research results are expected to be useful for shipping companies that provide passenger transportation services to be able to develop their services so that they can attract consumers to use ships as a means of transportation.

Literature Review

Service Quality

The most important thing in the service industry is the best service, so that customers feel comfortable and continue to use the services the industry offers. According to Nasution,

service quality is the expected level of excellence and control over the level of excellence to meet customer desires (Nasution, 2004). Based on the theory, a service provider must try to give maximum efforts to meet customer expectations and needs so that satisfaction is achieved.

Dimensions of Service Quality (SERVQUAL) by Parasuraman (1998) consist of five dimensions (Lupiyoadi, 2001) :

- a. Tangibles (physical evidence): It is the ability of a company to show its existence to external parties.
- b. Reliability: It is the company's ability to provide services as promised accurately and reliably.
- c. Responsiveness: This means the willingness to help and provide fast (responsive) and appropriate service to customers, with clear information delivery.
- d. Assurance (guarantee and certainty): It covers knowledge, courtesy, and the ability of company employees to foster customer trust in the company.
- e. Empathy: It is to give sincere and individual or personal attention given to customers by trying to understand consumer desires.

From the description above, we can conclude that service quality is the level of excellence to meet customer desires which aim to provide needs for customers, which is a sense of comfort so that customer satisfaction is achieved.

Price

Philip Kotler states that what is meant by price is the amount of money determined by the product to be paid by consumers to cover the costs of production, distribution, and basic sales including the return that marks the effort and risk. In line with Kotler's idea, Hawkins Best and Coney define that price refers to the amount of money that must be paid to get the rights to use a product (Gofur, 2019).

According to Husein Umar (2000) price is the amount of value that consumers exchange for the benefits of owning or using a product or service whose value is determined by the buyer and seller through a bargaining process, or is set by the seller for the same price for all buyers.

There are four indicators that characterize price (Kotler & Armstrong, 2008) :

- a. Affordability of prices: It is the purchasing power of consumers at the price set by the Manufacturer
- b. Price conformity with product quality: The price set by the company corresponds to the quality of the products sold.

- c. Price competitiveness: This means how the price of a product compares to a competitor's product
- d. Price conformity with benefits: The benefits of the products sold by the company, in accordance with the benefits that can be obtained by consumers.

From all the above theories, we can conclude that a price is some value, usually in the form of money, which is agreed by the seller and the buyer to get an item or service.

Purchase Intention

Intention in using a particular service is related to consumer behavior and their attitude in responding to product offerings in the form of services (Ajzen, 1991). Intention shows the intensity of certain behaviors, this is following the definition of Purchase Intention according to Kotler, Purchase Intention is a consumer behavior that appears in response to objects that indicate a person's desire to make a purchase. Intention in using services is affected by customer behavior, which is related to service quality, price advantage, and the risks faced when choosing to use certain services (Kabel et al., 2020).

Ajzen (1991) suggested that intention is considered as an indicator of the extent to which people are willing to approach certain behaviors and how much effort they are trying to perform certain behaviors (Lim et al., 2016). According to Ferdinand, purchase intention can be categorized into several types and levels (Ferdinand, 2014), which consist:

- a. Transactional Interest: It is the tendency of a person to buy a product.
- b. Referential Interest: It is the tendency of a person to refer a product to others.
- c. Preferential Interests: This refers to interests that describe the behavior of a person who has a primary preference for the product.
- d. Explorative Interest: It is to describe the behavior of a person who is always looking for information about the product he or she is interested in and looking for information to support the positive features of the product.

Based on these theories, it can be concluded that purchase intention for customers has a significant effect on getting the expected product, which will make customers feel satisfied with the services they choose. In line with this, it is very important to evaluate the concept of Purchase Intention in this study.

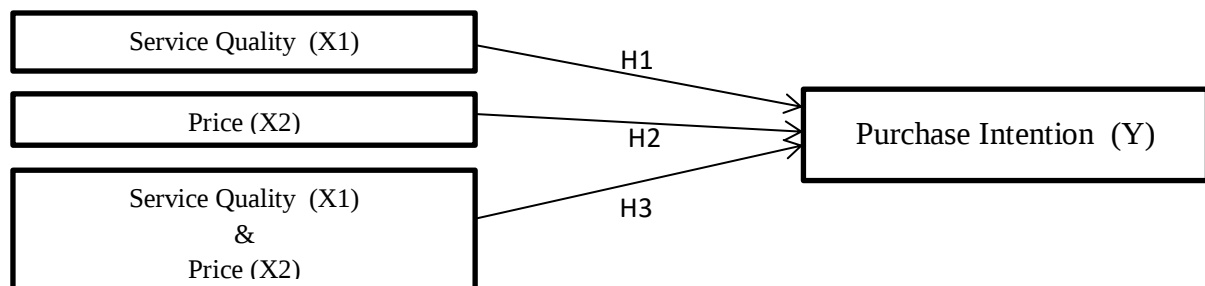


Figure 2.

H1 : Quality of Service positively affects Purchase Intention

H2 : Price positively affects Purchase Intention

H3 : Quality of Service and Price positively affects Purchase Intention

METHOD

The method used in this study was a quantitative method with a descriptive type of research. Data collection was based on primary data, which was obtained from questionnaires. The time for this research was 25 June 2021.

2.1 Data Collection techniques and Analysis

Data were taken from questionnaires distributed to passengers of KM. Kelud PT. PELNI. Questionnaire data collection is divided into 2, using google form with QR code scan and paper to facilitate passengers who have difficulty using google form. This questionnaire is distributed to passenger of KM. Kelud PT. PELNI on June 25, 2021. To measure each variable, this study used an ordinal scale and an instrument scale, which was the Likert Scale consisting of 5 classes, they were "strongly disagree" (1) to "strongly agree" (5) used as a measure of attitude for the independent variable and depends.

To ensure that each variable indicator in the questionnaire was valid and eligible for use in data collection, a Validity Test and Reliability Test were conducted. According to Lasse, Test Validity is defined as a test of how accurately a measuring instrument performs its function according to the needs of researchers (Lasse, 2019a). Meanwhile, the reliability test is a test that is useful for measuring if the instrument items have been used repeatedly to test at different times and situations, but it still retains its reliability or the results remain consistent and stable (Lasse, 2019b).

The data was analyzed by using multiple linear regression analysis. Multiple linear regression describes the correlation between variables, such as the dependent variable and the independent variable. Correlation between variables were determined using Partial Hypothesis Test (T test) and Simultaneous Hypothesis Test (F test).

2.2 Population and Sample

The population in this study was 1000 passengers aboard KM. Kelud PT. PELNI. Meanwhile, the sample in the study was 91 passengers and data collection was conducted at Nusantara Passenger Terminal, Tanjung Priok Port (Slovin, 1960. Error rate 10%)

Capacity of KM. Kelud PT. PELNI was normally 2000 passengers in one trip. Due to the Covid-19 pandemic, passengers were limited to only 50% of the ship's capacity. Thus,

the population in this study was 1000 passengers aboard KM. Kelud PT. PELNI. The sample was determined using the Slovin formula, with a significance rate of 10% (Lasse, 2019c), so the number of samples in the study was 91 passengers.

$$\text{Slovin Formula} = n = \frac{N}{1 + N \cdot d^2} = \frac{1000}{1 + 1000 \cdot 0,01} = 90,90 = 91$$

RESULT & DISCUSSION

Characteristics of Respondents

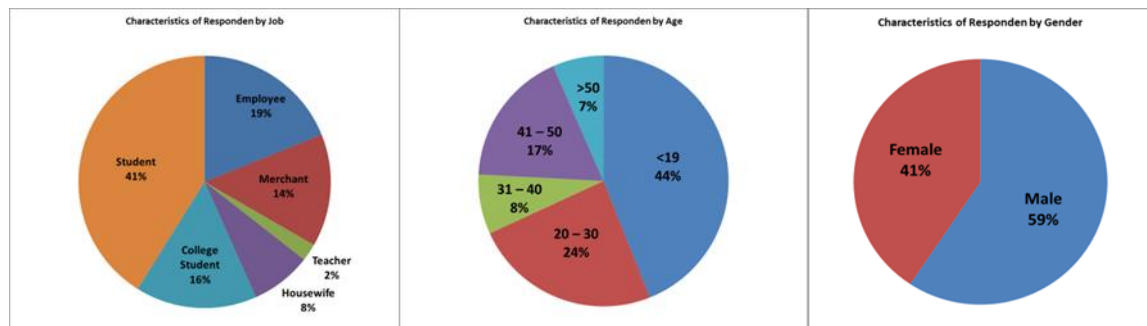


Figure 3. Characteristics of Responden

The research was conducted by distributing questionnaires to 91 respondents who were passengers of KM. Kelud PT. PELNI with the route is Jakarta-Batam-Belawan which traveled in June from the Nusantara Passenger Terminal, Tanjung Priok Port. Characteristics of respondents included gender, age, and occupation. Based on gender, male respondents were 59% more than female respondents. Concerning age, most respondents were less than 19 years old, which was 44%, then followed by respondents aged 20-30 years at 24%, aged 41-50 years at 17%, aged 31-40 years at 8%, and the respondents aged over 50 years old, which was 7%. Characteristics of respondents based on occupation were students, being the majority of the respondents at 41%, followed by employees at 19%, students at 16%, traders at 14%, housewives at 8%, and the least was teacher at 2%.

3.1 Instrument

The instruments in this study consisted of two tests, they were the validity test and the reliability test. Validity Test and Reliability Test were carried out by taking 30 respondents outside the sample that had been tested.

1. Validity Test

Validity test used SPSS ver.28 for Windows program and the following results were obtained:

Table 1. Validity Result

SERVICE QUALITY (X1)	PRICE (X2)	PURCHASE INTENTION (Y)
----------------------	------------	------------------------

Indicator	Pearson Correlation	Validity	Indicator	Pearson Correlation	Validity	Indicator	Pearson Correlation	Validity
X1.1	0,696	Valid	X2.1	0,652	Valid	Y.1	0,739	Valid
X1.2	0,647	Valid	X2.2	0,763	Valid	Y.2	0,816	Valid
X1.3	0,653	Valid	X2.3	0,838	Valid	Y.3	0,811	Valid
X1.4	0,710	Valid	X2.4	0,688	Valid	Y.4	0,753	Valid
X1.5	0,820	Valid	X2.5	0,717	Valid	Y.5	0,594	Valid
X1.6	0,782	Valid	X2.6	0,574	Valid	Y.6	0,705	Valid
X1.7	0,583	Valid	X2.7	0,827	Valid	Y.7	0,807	Valid
X1.8	0,661	Valid	X2.8	0,743	Valid	Y.8	0,654	Valid
X1.9	0,243	Not Valid						
X1.10	0,827	Valid						

Source : Validity Test by using SPSS ver.28

The table above shows that there are valid and one invalid questionnaire variables, so the invalid questionnaire variables was dropped or unused on the questionnaire which was distributed to 91 samples. (r table for N=30 is 0.361)

2. Reliability Test

Reliability test was carried out using SPSS ver.28 for Windows program and the following results were obtained:

Table 2. Reliability Results

Item	Cronbach's Alpha	Nilai Kritis	N of item	Keterangan
X1	0,860	0,60	10	Reliabel
X2	0,870	0,60	8	Reliabel
Y	0,874	0,60	8	Reliabel

Source : Reliability Test by using SPSS ver.28

If the Cronbach Alpha value > 0.60 then the questionnaire is declared reliable. Based on Table 3, the value of Cronbach's Alpha on the variables X1, X2, and Y is more than 0.60. Therefore, it can be concluded that all instrument items used were suitable for collecting data.

3.2 Data Analysis Results

1. Partial Hypothesis Test (T – Test)

Table 3. Partial Hypothesis Test (T – Test)

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,084	2,358		2,156	,034
	Service Quality (X1)	,192	,102	,205	1,874	,064
	Price (X2)	,625	,108	,637	5,814	<,001

a. Dependent Variable: Purchase Intention (Y)

Source : Partial Hypothesis Test by using SPSS ver.28

- If the significance value is < 0.05 or $t \text{ count} > t \text{ table}$ then the hypothesis is accepted
- If the significance value > 0.05 or $t \text{ count} < t \text{ table}$ then the hypothesis is rejected

Based on the T-test results table, the service quality variable (X1) has a significance value of $0.064 > 0.05$. In addition, the value of $t \text{ arithmetic}$ is $1.874 < t \text{ table } 1.991$ so that H1 is rejected with a 95% confidence level. That is, the service quality variable (X1) does not have a partial influence on the purchase intention variable (Y).

Based on the table of T-test results, the price variable (Y) has a significant value of $0.01 < 0.05$. In addition, the $t \text{ arithmetic}$ value is $5.814 > t \text{ table } 1.991$ so that H2 is accepted with a 95% confidence level. That is, the price variable (X2) has a partial influence on the purchase intention variable (Y).

2. Simultaneous Hypothesis Test (F-Test)

Table 4. Simultaneous Hypothesis Test (F-Test)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	863,925	2	431,963	86,386	$< .001^b$
	Residual	440,031	88	5,000		
	Total	1303,956	90			
a. Dependent Variable: Purchase Intention (Y)						
b. Predictors: (Constant), Price (X2), Service Quality (X1)						

Source : Simultaneous Hypothesis Test by using SPSS ver.28

- If the significance value is < 0.05 or $F \text{ count} > F \text{ table}$ then the hypothesis is accepted
- If the significance value > 0.05 or $F \text{ count} < F \text{ table}$ then the hypothesis is rejected

Based on the table of T-test results, it is known that the significance value is $0.001 < 0.05$, other than that the calculated F value is $86.386 > F \text{ table } 3.10$. Therefore, it can be concluded that H3 is accepted, which means that there is an effect of service quality (X1) and price (X2) simultaneously on purchase intention (Y).

3. Determination Coefficient Result

Table 5. The Result of Determination Coefficient R Square

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,814 ^a	,663	,655	2,23615
a. Predictors: (Constant), Price (X2), Service Quality (X1)				

Based on the table, it is known that the value of R square is 0.663. This means that the variables of service quality and price simultaneously affect the purchase intention in using PT. PELNI ships during the Covid-19 pandemic by 66.3%. While the remaining 33.7% is influenced by other factors.

3.3 Discussion

Quality service of KM. Kelud PT. PELNI's during the Covid-19 pandemic was overall good (4,5). From passengers' perception, the statement that must be maintained is that KM. Kelud Ship should be always in a clean and well-maintained condition so that passengers are comfortable when traveling. Furthermore, to improve services, it is expected that PT. PELNI's ship departure schedule is always on time and according to schedule.

Ticket price of KM. Kelud set by PT. PELNI during the Covid-19 Pandemic as a whole is good (4,2). From passenger's perception, what must be maintained is the suitability of ticket prices with the benefits that passengers get. Things that need to be improved in determining ticket prices for KM. Kelud PT. PELNI is the range of ticket prices with the purchasing power of passengers and the competitiveness of ticket prices with similar services.

Based on the results of hypothesis testing and multiple linear regression analysis, it partially shows that service quality does not affect intention in using PT. PELNI passenger ships during the Covid-19 Pandemic. However, the price affects an intention in using PT. PELNI passenger ships during the Covid-19 Pandemic. The results of the study simultaneously show the influence of service quality and intention in using PT. PELNI ships during the Covid 19 Pandemic.

KM. Kelud paid attention to the affordable price to buy tickets to get to the destination. This can be seen from the profile of respondents in the form of KM. Kelud passengers, the majority were students(cadets), traders, and employees. Respondents who were mostly middle to lower economic groups choose to use ships as a way of traveling because the prices were cheaper so that it was affordable for ship passengers. Especially during the Covid-19 Pandemic, the economy has been unstable, and many are having difficulty getting a job or earning a living, so the use of PT. PELNI ships is the right transportation choice in this time.

Ship passengers were dominated by students aged 19 years, which was 41%, this was mainly due to the Sailing School students who were doing field trips at that time the

questionnaires were distributed. it was then followed by respondents aged 20-30 years by 24%. From the characteristics of respondents by age, it was dominated by the age of 19-30 years. People at that age usually do not pay much attention to the quality of service, and the most important thing is to be able to get tickets at affordable prices.

The average respondent was male by 59% more than female respondents by 41%. The number of women was less than men, this could also affect because women are usually more concerned with comfort.

CONCLUSION

Service quality does not affect intention in using PT. PELNI during the Covid-19 Pandemic. This is because of KM. Kelud passengers does not pay much attention to the quality of service, but the most important thing is to be able to safely arrive at the destination.

While the price affects the intention in using the ship PT. PELNI during the Covid-19 Pandemic KM. Kelud passengers paid attention to the affordable price to buy tickets to get to the destination. This can be seen from the characteristics of respondents based on gender, the majority are male, based on occupation the majority were students (cadets), and based on age the majority were 19-30 years old where they were not too concerned with service quality, and the most important thing was cheap and affordable ticket prices, so they could travel and arrive safely at their destination.

Simultaneously, the quality of service and price together affect the intention in using PT. PELNI during the Covid-19 pandemic. Compared to other modes of transportation, ships do take a longer time than other modes of transportation. However, it should be kept in mind that sea transportation has a cheaper price and does not have a limit for luggage so that passengers do not have to pay more. This is of course by the results of our research, which is that the price affects the intention in using PT. PELNI

SUGGESTION

For PT. PELNI, the results of this study are expected to be a reference for PT. PELNI to increase public intention in using PT. PELNI passenger ships as a means of transportation in traveling. Efforts are made especially in terms of improving the quality of services that are considered unsatisfactory and maintaining satisfactory service quality. The results of this study are also expected to be a suggestion for PT. PELNI in setting prices so that they

are more in line with people's purchasing power and prices that can compete with similar service providers.

For further research, it can examine the buying interest of passengers based on other factors such as the company's brand image, online ticket purchasing procedures, and promotions held by the company. Because now ticket reservations are usually done online and many passengers are found who do not understand the procedure for buying tickets online. Further research can also be done by focusing on other types of ships that serve passengers, such as ferries and inter-island crossing ships.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Aptaguna, A., & Pitaloka, E. (2016). Pengaruh Kualitas Layanan Dan Harga Terhadap Minat Beli Jasa Go-Jek. *Widyakala Journal*, 3(2012), 49. <https://doi.org/10.36262/widyakala.v3i0.24>
- Ferdinand, A. (2014). *Metode Penelitian Manajemen*. BP Universitas Diponegoro.
- Gofur, A. (2019). Pengaruh Kualitas Pelayanan Dan Harga Terhadap Kepuasan Pelanggan. *Jurnal Riset Manajemen Dan Bisnis (JRMB) Fakultas Ekonomi UNIAT*, 4(1), 37–44. <https://doi.org/10.36226/jrmb.v4i1.240>
- Kabel, D., Ahlstedt, S., Elg, M., & Sundin, E. (2020). Consumer purchase intention of remanufactured EEE products - A study on robotic lawn mowers in Sweden. *Procedia CIRP*, 90, 79–84. <https://doi.org/10.1016/j.procir.2020.01.091>
- Kim, K. (2021). Impacts of COVID-19 on transportation: Summary and synthesis of interdisciplinary research. In *Transportation Research Interdisciplinary Perspectives* (Vol. 9, p. 100305). Elsevier Ltd. <https://doi.org/10.1016/j.trip.2021.100305>
- Kotler, P., & Armstrong, G. (2008). *Prinsi Prinsip Pemasaran* (12th ed.). Erlangga.
- Lasse, david. (2019a). *Shipping Research Method*. RajaGrafindo Persada.
- Lasse, david. (2019b). *Shipping Research Method*. RajaGrafindo Persada.
- Lasse, david. (2019c). *Shipping Research Method*. RajaGrafindo Persada.
- Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors Influencing Online Shopping Behavior: The Mediating Role of Purchase Intention.

Procedia Economics and Finance, 35, 401–410. [https://doi.org/10.1016/s2212-5671\(16\)00050-2](https://doi.org/10.1016/s2212-5671(16)00050-2)

Lupiyoadi, R. (2001). *Manajemen Pemasaran Jasa*. Penerbit Salemba Empat.

Nasution. (2004). *Manajemen Jasa Terpadu*. Ghalia.

Nikhashemi, S. R., Haque, A., Yasmin, F., & Khatibi, A. (2012). Service Quality and Consumer Purchasing Intention Toward Online Ticketing: An Empirical Study in Iran. *International Conference on Economics, Business Innovation*, 38, 150–154. <http://www.ipedr.com/vol38/031-ICEBI2012-A10046.pdf>

Paskalis, Y., & Nur, A. (2020, January 8). Jumlah Penumpang Kapal Pelni Melonjak Selama 2019. *Tempo*. <https://koran.tempo.co/read/ekonomi-dan-bisnis/449064/jumlah-penumpang-kapal-pelni-melonjak-selama-2019>

Wei, J. Te, Liu, Y. X., Zhu, Y. C., Qian, J., Ye, R. Z., Li, C. Y., Ji, X. K., Li, H. K., Qi, C., Wang, Y., Yang, F., Zhou, Y. H., Yan, R., Cui, X. M., Liu, Y. L., Jia, N., Li, S. X., Li, X. J., Xue, F. Z., ... Cao, W. C. (2020). Impacts of transportation and meteorological factors on the transmission of COVID-19. *International Journal of Hygiene and Environmental Health*, 230, 113610. <https://doi.org/10.1016/j.ijheh.2020.113610>