

The Effect of Volume of Goods and Accuracy of Delivery of Goods on Customer Satisfaction Through the Cost Efficiency of Shipping Goods at Shipping Service Companies in Jakarta

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Abstract

Planning the delivery and distribution of goods from upstream to downstream cannot be separated from several problems related to shipping costs. It is true that, considering the size of the volume of shipping goods, the question arises about how shipping costs depend on this variable. The relationship between the size of the volume of shipping goods and shipping costs is not an easy one. In particular, the influence of costs depending on vehicle capacity constraints is distinguished. On the other hand, the variable of delivery accuracy also greatly influences delivery costs, in the case of some goods that require special handling, this is very much taken into consideration. From these considerations, the author decided to highlight several factors that influence shipping costs, namely the volume, weight of goods and delivery accuracy, which will later influence customer satisfaction, which is carried out through expedition services, forwarders or shipping lines. The results confirm our hypothesis that transportation has the advantage to provide better services for customers in terms of shipping costs by considering aspects of volume and delivery accuracy. Although when evaluating the accuracy of goods delivery, some customers do not pay much attention to this when the production goods they send are general goods, they need to take into account the possible risks that arise when the production goods they send rot quickly or are dangerous goods, because this is important for accuracy of delivery.

INTRODUCTION

Almost every company has a goal to obtain maximum profit or profit. To be able to achieve these goals the company needs planning and also cost control. In addition, service companies also need information about costs related to an activity for the company's internal needs. This cost information is useful for companies in order to manage and plan economic resources to produce an output, and even provide information to assess the performance of the section in terms of the effectiveness and efficiency of the costs of the section concerned. Costing is a critical decision that supports the operations of both profit and non-profit organizations (Tjiptono, 2015).

In the process of making decisions about the type of transportation to be used in the logistics of the company to be selected, knowledge of the procedure for calculating the total cost of delivery is required (Gnap et al., 2019). In this case, freight forwarding service providers have a strategic role in improving the performance of the flow of goods from one region to another, in order to function as a means of transportation of goods from the place of origin of delivery to the destination of delivery, including the provision of transportation access for both short and long distances (Kotler & Armstrong, 2013).

Today's logistics companies also need to assess the technological possibilities on the

production side, such as in packaging lines, loading equipment, and customer requirements that are often limited when products enter the production process and are then shipped. For example, matters relating to the maximum weight of goods in relation to equipment limitations during handling on the production line. This incoming data is important to determine the size of the transportation unit and the required transportation equipment according to the applicable load distribution Jagelčák et al., 2018; Kampf et al., 2018. . On certain criteria, the performance of road transportation in practice may be similar. As for the type of goods, four aggregate categories have been considered as well, such as: high-value general loads, low-value general loads, perishable goods, and dangerous goods. Their application of statistical tests proves that the type of goods does not greatly influence the decision to use transportation. Therefore, the investigation of decision patterns should be based on a combination of criteria (Kaproos et al., 2005).

They argue that the factors in choosing transportation services are cost efficiency, transportation time, and transportation quality, but after ensuring the basic requirements of transportation quality, transportation cost is the decisive factor. On the other hand, Samimi et al., 2011 found that shipment-specific variables (e.g. shipment distance, item volume, and value) and mode-specific variables (e.g. shipment time and cost) are the main determinants of mode choice. Many other authors, such as Hansen et al., 2012, also consider time as an important transportation characteristic, but its importance depends on the time cost of transporting the goods.

However, there is an interesting point for me to try to research further that whether it is true that the efficiency of shipping costs will satisfy users and customers even if they get cheap shipping efficiency costs. There are also many specifications of general goods that require timeliness when shipping goods and are of high value excluded from previous writings, so that the findings do not apply to certain types of cargo in economies of scale and economic distance may also not be considered. All of this leads to customer satisfaction which is a highly desirable target for transportation businesses as satisfied customers tend to use services more often, and spread positive word-of-mouth to other customers. The relationship between customer satisfaction and customer loyalty links customer attitudes such as how much a customer is satisfied with a company's product or service, with customer behavior to make ongoing transactions for a product or service.

A product can satisfy consumers if it is seen as meeting or exceeding their wants and expectations (Susanti & Jasmani, 2020). Customer satisfaction will also lead to greater customer loyalty, reduce future transaction costs, have a positive impact on company revenue and minimize customer turnover to non-optimal quality. No less important, service companies must also be able to bind consumers with quality products and services, so that consumers are satisfied and remain loyal (Butarbutar et al., 2020). Ibrahim & Thawil, 2019 also emphasized that satisfaction is the result of consumer assessment of the level of pleasure obtained from a product or service, which can be more or less than expected.

The need for knowledge of the size/volume of goods and freight rates and technical constraints on the timeliness schedule whether it has a balanced price in overcoming the problem of shipping costs, because taking into account the size/volume of shipments, the question will arise of how freight rates depend on these two variables. The necessity of logistics actors in the selection of transportation modes as an interpretation of logistics actors regarding the preferences of shippers for the timeliness of shorter trips. The decision to choose the mode of transportation, leads to transportation performance such as: the level of service provided, the level of negotiated shipping costs, or the assessment of operational performance for on time. Customer satisfaction is also a highly desirable target for transportation businesses because satisfied customers tend to use the service more often..

RESEARCH METHODS

This study uses a quantitative approach to examine the relationship between the variables of volume of goods, delivery accuracy, shipping cost efficiency, and customer satisfaction. This approach aims to identify the direct and indirect effects between variables using statistical analysis methods. Population: Customers of freight forwarding services who use the services of freight forwarding companies in Jakarta. Sample: A sample of 100 respondents was selected using purposive sampling method.

RESULTS AND DISCUSSION

Descriptive Analysis

Research respondents are customers of goods delivery services at private companies and companies engaged in services in Jakarta. Based on the findings of an online survey conducted through Google Sheets. According to the quality and standard of the sample obtained, 70 people (70 percent) out of 100 respondents were considered suitable for inclusion. 43 men and 27 women completed the survey. With the age of 22-31 years about 24 people, 32-41 years about 19 people, 42-51 years about 20 people, and 51 years and over about 7 people. With the education level of workers, the most workers are workers from the Diploma / S1 education level, namely 40 people. Through the findings of the respondent data obtained more than 50% of customers are users of goods delivery services through expedition, shipping and forwarder companies.

2. Hypothesis Test

Discriminant Validity

Discriminant Validity Table

	Biaya Pengiriman	Kepuasan Pelanggan	Ketepatan Pengiriman Barang	Volume Barang
Volume Barang	0,73	0,777	0,793	0,741
Ketepatan Pengiriman Barang	0,759	0,75	0,762	
Biaya Pengiriman	0,881			
Kepuasan Pelanggan	0,863	0,797		

Interpretation

1. Volume of Goods and Shipping Costs (0.23):

There is a weak positive relationship between the volume of goods and shipping costs. This means that as the volume of goods increases, shipping costs tend to rise, but the impact is not very strong.

2. Volume of Goods and Customer Satisfaction (0.777):

There is a fairly strong positive relationship between the volume of goods and customer satisfaction. This indicates that an appropriate volume of goods can significantly enhance customer satisfaction.

3. Volume of Goods and Delivery Accuracy (0.925):

There is a very strong positive relationship between the volume of goods and delivery accuracy. This indicates that good management of the volume of goods directly impacts delivery accuracy.

4. Delivery Accuracy and Shipping Costs (0.759):

There is a fairly strong positive relationship between delivery accuracy and shipping costs. This means that maintaining delivery accuracy requires additional costs to ensure timely delivery.

5. Timeliness of Delivery and Customer Satisfaction (0.95):

A very strong and positive relationship between the timeliness of delivery and customer satisfaction. This confirms that customers are more satisfied when goods are delivered on time.

6. Shipping Costs and Customer Satisfaction (0.368):

A weak positive relationship between shipping costs and customer satisfaction. This indicates that shipping costs have a small impact on customer satisfaction compared to other variables.

7. Delivery Accuracy and Volume of Goods (0.942): A very strong relationship between delivery accuracy and the volume of goods. This emphasizes that good management of goods volume greatly affects the company's ability to deliver on time.

Reliability Test

Reliability Test Table

	<i>Cronbach's Alpha</i>	<i>Composite Reliability</i>	<i>Average Variance Extracted</i>
Volume Barang	0,896	0,916	0,549
Ketepatan Pengiriman Barang	0,952	0,957	0,581
Biaya Pengiriman	0,951	0,960	0,776
Kepuasan Pelanggan	0,904	0,924	0,635

Interpretation

1. Volume of Goods

Cronbach's Alpha (0.896): Indicates very good internal reliability. This value is above the minimum threshold of 0.7, indicating that the indicators in the Volume of Goods construct have high consistency. AVE (0.549): This value is above the minimum threshold of 0.5, meaning that more than 50% of the variance in the indicators is explained by the Volume of Goods construct. This construct is valid in terms of convergence.

2. Delivery Accuracy

Cronbach's Alpha (0.952): Very high internal reliability, far above the minimum value of 0.7. The indicators in this construct are very consistent. AVE (0.581): The AVE value above 0.5 indicates adequate convergent validity for this construct. The indicators used sufficiently represent the construct of Delivery Accuracy.

3. Shipping Costs

Cronbach's Alpha (0.951): Very high internal reliability. All indicators in this construct are very consistent. AVE (0.776): The very high AVE value indicates that most of the indicator variance is explained by the Shipping Cost construct. This construct has very strong convergent validity.

4. Customer Satisfaction

Cronbach's Alpha (0.904): Internal reliability is very good, consistent with the indicators used. AVE (0.635): The AVE value is above the threshold of 0.5, which means the indicators are strong enough to explain the Customer Satisfaction construct.

RSquare Test

RSquare Table

	R-square	R-square adjusted
Biaya Pengiriman	0,621	0,609
Kepuasan Pelanggan	0,792	0,783

Interpretation

1. Shipping Costs

The R-Square value (0.621) indicates that 62.1% of the variation in the Shipping Costs variable can be explained by the independent variables used in the model (e.g., Volume of Goods and Timeliness of Delivery). The remaining 37.9% is explained by factors outside the model.

2. Customer Satisfaction

The R-Square value (0.792) indicates that 79.2% of the variation in the Customer Satisfaction variable can be explained by the variables in the model (e.g., Shipping Costs, Volume of Goods, and Timeliness of Delivery). The remaining 20.8% is explained by factors not included in the model.

F Square Ts

F Square Test Table

	F-Square
Biaya Pengiriman -> Kepuasan Pelanggan	0,679
Ketepatan Pengiriman Barang -> Biaya Pengiriman	0,23
Ketepatan Pengiriman Barang -> Kepuasan Pelanggan	0,006
Volume Barang -> Biaya Pengiriman	0,117
Volume Barang -> Kepuasan Pelanggan	0,126

Interpretation

1. Shipping Costs on Customer Satisfaction (0.679)

The F-Square value of 0.679 indicates a significant influence of Shipping Costs on Customer Satisfaction. This suggests that Shipping Costs are one of the main factors affecting Customer Satisfaction.

2. Timeliness of Goods Delivery on Shipping Costs (0.23)

The F-Square value of 0.23 indicates a moderate influence of the Timeliness of Goods Delivery on Shipping Costs. This means that the Timeliness of Goods Delivery has a fairly significant contribution in determining Shipping Costs.

3. Timeliness of Goods Delivery on Customer Satisfaction (0.006)

The F-Square value of 0.006 indicates a very small influence of the Timeliness of Goods Delivery on Customer Satisfaction. This suggests that the Timeliness of Goods Delivery does not directly significantly affect Customer Satisfaction, or its influence may be mediated by other variables. (seperti Biaya Pengiriman).

4. Volume of Goods on Shipping Costs (0.117)

An F-Square value of 0.117 indicates a small to moderate influence of the Volume of Goods on Shipping Costs. The Volume of Goods contributes to Shipping Costs, but its influence is not as significant as other variables.

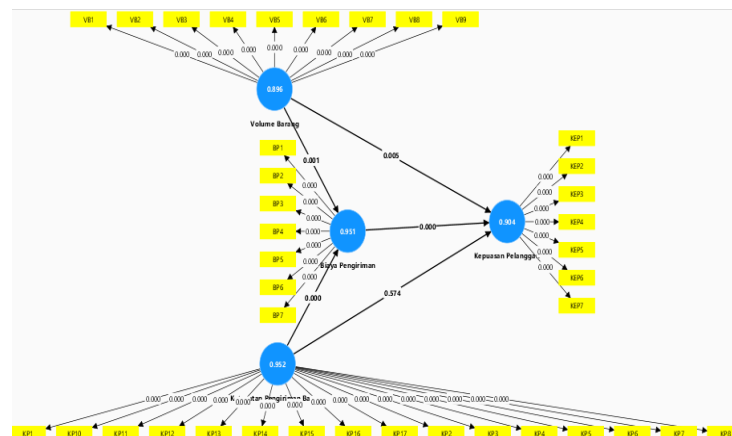
5. Volume of Goods on Customer Satisfaction (0.126)

The F-Square value of 0.126 indicates a small to moderate influence of Volume of Goods on Customer Satisfaction. This means that Volume of Goods contributes to Customer Satisfaction, but its impact is not dominant compared to other variables, such as Shipping Costs.

Hypothesis

In hypothesis testing, direct impact and indirect influence can be concluded on exogenous variables that significantly affect endogenous variables if the P value is less than 0.05 and the t-statistic is greater than 1.96. However, if the P value is greater than 0.05, it cannot be concluded that the exogenous variable, namely birth, significantly affects the endogenous variable.

Testing



H1: The volume of goods has a positive effect on shipping costs with a P.Value of 0.001, thus the hypothesis is accepted.

H2: Delivery accuracy has a positive effect on shipping costs with a P.Value of 0.000, thus the hypothesis is accepted.

H3: The volume of goods has a positive effect on customer satisfaction with a P.Value of 0.005, thus the hypothesis is accepted.

H4: Delivery accuracy has a positive effect on customer satisfaction with a P.Value of 0.574, thus the hypothesis is rejected.

H5: Shipping costs have a positive effect on customer satisfaction with a P.Value of 0.000, thus the hypothesis is accepted.

H6: The volume of goods has a positive effect on customer satisfaction through shipping costs as an intervening variable with a P.Value of 0.003, thus the hypothesis is accepted.

H7: Delivery accuracy has a positive effect on customer satisfaction through shipping costs as an intervening variable with a P.Value of 0.000, thus the hypothesis is accepted.

DISCUSSION

Path Coefficient Test Results Table

<i>Path</i>	<i>Path coefficients</i>
Biaya Pengiriman -> Kepuasan Pelanggan	0,609
Ketepatan Pengiriman Barang -> Biaya Pengiriman	0,485
Ketepatan Pengiriman Barang -> Kepuasan Pelanggan	0,065
Volume Barang -> Biaya Pengiriman	0,346
Volume Barang -> Kepuasan Pelanggan	0,280

Interpretation

1. Shipping Costs -> Customer Satisfaction (0.609):

This path coefficient indicates a strong and significant positive relationship between shipping costs and customer satisfaction. The lower the shipping costs offered by the company, the higher the level of customer satisfaction. This can be explained by the customer value theory, where customers will feel satisfied if they perceive good value from the products or services they purchase, and lower shipping costs can enhance that perception of value.

2. Timeliness of Goods Delivery -> Shipping Costs (0.485):

This path coefficient also indicates a strong and significant positive relationship. The higher the level of delivery accuracy, the higher the shipping costs. This may seem counterintuitive, but it can be explained by several factors. For example, companies may need to incur higher costs to ensure delivery accuracy, such as expenses for tracking technology, employee training, or the use of express delivery services.

3. Delivery Accuracy -> Customer Satisfaction (0.065):

Although this path coefficient is positive, its value is very small and statistically insignificant. Because not all types of goods require timely delivery, for hazardous items or perishable goods, some customers may need timely delivery, but for general goods, some customers are already satisfied if the items arrive at their destination and the delivery timing is still tolerable.

4. Volume of Goods -> Shipping Cost (0.346):

This path coefficient shows a moderate and significant positive relationship. The larger the volume of goods being shipped, the higher the shipping cost. This is in line with expectations, as shipping larger volumes of goods usually requires more resources, such as transportation, handling, and storage costs.

5. Volume of Goods -> Customer Satisfaction (0.280):

This path coefficient also shows a moderate and significant positive relationship. The larger the volume of goods purchased by customers, the higher their level of satisfaction. This is

because customers feel they get better value when they have a large volume of goods, allowing them to save on truck loading capacity by packing it more tightly. Additionally, customers with large shipments are those with specific needs, so when their needs are met well, they will feel more satisfied.

Table of Specific Indirect Effect Test Results

<i>Path</i>	<i>Specific indirect effects</i>
Ketepatan Pengiriman Barang -> Biaya Pengiriman -> Kepuasan Pelanggan	0,295
Volume Barang -> Biaya Pengiriman -> Kepuasan Pelanggan	0,211

Interpretation

1. Timeliness of Goods Delivery To Shipping Costs To Customer Satisfaction (0.295):

This indicates that the timeliness of goods delivery has a positive and significant indirect effect on customer satisfaction through the mediating variable of shipping costs. This means that an increase in the timeliness of goods delivery will reduce shipping costs, and this reduction in shipping costs will, in turn, increase customer satisfaction. The coefficient value of 0.295 indicates that this indirect effect is quite large and significantly contributes to the overall relationship between the timeliness of goods delivery and customer satisfaction.

2. Volume of Goods To Shipping Costs To Customer Satisfaction (0.211):

This indicates that the volume of goods also has a positive and significant indirect effect on customer satisfaction through the mediating variable of shipping costs. This means that an increase in the volume of goods will increase shipping costs, and this increase in shipping costs will decrease customer satisfaction. The coefficient value of 0.211 indicates that this indirect effect is quite large and significantly contributes to the overall relationship between the volume of goods and customer satisfaction.

CONCLUSION

Instilling anti-corruption character values is an important component in Pancasila learning, where teachers can apply various effective strategies and activities to instill anti-corruption values in students. The implementation of anti-corruption character values should be carried out from an early age so that when they grow up, an understanding of anti-corruption character has been formed so that they understand the dangers caused by corruption. The impact of a culture of corruption is very large so that prevention and socialization of the dangers of corruption related to the internalization of anti-corruption character values should be carried out. Cooperation between schools, parents, and the community needs to be carried out to support the instillation of anti-corruption character values. Efforts to internalize anti-corruption character values need support from parents in guiding their children to apply character values while at home. So that with ongoing efforts from all parties, instilling anti-corruption character values can help create a

young generation with integrity and anti-corruption, and ultimately can contribute to building an Indonesia that is free from corruption.

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