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Factors Considered By PT Mandala Samudera Trans Semarang In Selecting Shipping Lines And Trucking Services To Export Dangerous Goods

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Abstract

This research aims to analyze the factors considered by PT Mandala Samudera Trans Semarang as a freight forwarder in choosing shipping lines and trucking services to export dangerous goods. The used research method is a qualitative research one. The data in this research are obtained by conducting interviews to 4 employees of company selected through purposive sampling technique. The obtained data is processed through the NVivo 12 software. The results in this study indicates that price (48.98%) is the main factor in choosing shipping lines to export dangerous goods. The service factor, i.e 37.70% is the factor for second consideration. The delivery factor is the fourth factor with a percentage of 13.11%. The last factor is reputation with a percentage of 8.20%. Meanwhile, the safety factor is the main factor in determining trucking services with a percentage of 35.17%. The second factor in choosing trucking services is the price factor with a percentage of 29.1%. The service factor of 27.08% and reputation of 8.33% are the next factors considered by PT Mandala Samudera Trans Semarang in choosing a trucking service company. Therefore, it is concluded that there are different factors in choosing shipping line and trucking services.

Keywords: **Forwarder, Shipping, Trucking Services, Selection**

INTRODUCTION

Trade is an economic activity of exchanging goods or services with the agreement between the seller and the buyer without any element of coercion. Differences in prices between regions and differences in factors of production are the two elements behind the need for trading activities in order to fulfill people's necessities. The difference in high volume of trade, the distance, and the regulations for each region in the process of

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international trade requires transportation services to support the smooth running of these activities. Freight forwarding plays a very important role in export-import activities, namely as a third party intermediary in sending exported goods.

Freight forwarding business is a transportation or logistics service that provides transportation consolidation services, warehousing, packaging of goods, document management related to the implementation of domestic and foreign trade activities (FIATA, 2013). Freight forwarding companies act as intermediaries between shippers and support service providers. Freight forwarding performance is directly affected by the performance of supporting service providers. PT Mandala Samudera Trans is a freight forwarder company located in Semarang. They must be a good intermediary party between the shipper and the buyer so that export activities can take place smoothly. The variety of export commodities to be sent makes companies have to find the right partner in distributing the customer's goods so that they arrive at their destination safely and on time.

Table 1 Export Transaction Of Dangerous Goods At PT Mandala Samudera Trans Semarang (In ton in 2020)

Destination Countries	Volume
Taiwan	1
India	23
Pakistan	10
Korea	9
Vietnam	3
Bangladesh	6
Egypt	5
Australia	1
China	1
Total	**59**

Source: PT Mandala Samudera Trans Semarang, 2021

The table above is a transaction for the export of dangerous goods at PT Mandala Samudera Trans Semarang showing that the company quite often receives requests to export goods that fall into the dangerous category. This type of goods will require special handling because it has a large risk of causing their damage. Andrea Galierikova, Jarmila Sosedova (2018) stated that the transportation of dangerous goods has a negative impact on the environment and, if an accident occurs, it can cause injury or death. This study evaluates the priority of influential factors in the selection of supporting service providers, i.e shipping services or shipping lines and trucking services appropriate for the export of

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dangerous goods.

LITERATURE REVIEW

As this article is related to dangerous goods, shipping services, freight forwarder, and trucking services involving stevedoring company, below are several theories underlying the discussion.

Shipping Companies

Shipping companies often referred to as Shipping Companies or Shipping Lines, have the main task of transporting goods from shipment port to the destination port based on the Shipping Instructions from the shipper. In addition, shipping lines also have other business fields as shipping agents and other businesses that support shipping activities. According to Suwarno (2011: 127) a shipping company is a state-owned or private enterprise, in the form of a state-owned company, Limited Liability Company (PT), *Comanditer Vennotcap* CV), and others carrying out business services providing space for ships for the benefit of transporting cargo of passengers (people) and goods (merchandise) from a port of origin (loading) to a destination port (unloading) both domestically (inter-islands) and abroad (ocean going shipping).

According to Kosasih (2007) the shipping business is an industrial business in the field of sea transportation services and the shipping industry which provides the following benefits (a) Place Utility, namely, for less useful goods in one place moved to a place where the benefits are greater, (b) Time Utility, for produced goods from a certain place at a certain time and is excessively transferred to a place not yet produced at the same time and requires transportation by ship carrying them by sea, lake or river. For a trade, both domestically and abroad, especially in the current global economic era, the role of commercial shipping occupies a very important and strategic role. Almost all exports and imports of goods transported by sellers and buyers tend to use sea transportation services more often.

Stevedoring Company

Loading and unloading companies have an important contribution to the smooth running of port operations, namely by unloading and loading goods from ships and onto ships, as well as being involved in warehousing and stacking of goods. In general, there are three main activities included in stevedoring company activities, including (a) stevedoring - an activity of unloading goods from and to ships using mechanical, non-mechanical equipment and supporting modes of transportation, (b) cargodoring - an activity of removing cargo/goods from the wharf and transporting those cargo/goods to the goods stacking yard and vice versa, (c) receiving/delivery - an activity of receiving goods from the

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owner of the goods to be placed in the warehouse/stockpiling yard. While delivery is an activity of handing over goods to be delivered to the owner of the goods.

Freight Forwarders

Freight forwarder is a company engaged in the field of Transportation Management Services (JPT). Freight forwarders have a role in arranging transportation to destinations safely and economical modes of transportation. In addition, the freight forwarder acts as an intermediary to handle cargo between the shipper (goods owner) and consignee (goods recipient) and with the carrier (carrier). The scope of the freight forwarder is responsible for the goods/cargo since it is received from the shipper until it is delivered over to the consignee. In its operations, freight forwarders use several modes of supporting transportation by sea, land and air transportation modes.

Trucking Services

Trucking is a land delivery service using a fleet of cars and trucks between cities and between islands where the goods to be sent are mixed with those of other people to meet the need for cheaper and faster delivery of goods. Trucks are one type of transportation with different sizes. The use of trucks is usually done to meet the needs of shipping goods with large quantities of the goods. Whereas a container is not a fleet, it is designed to be able to store flexible large items and can be carried or sent wherever to any destination port. Trucking performance is a result of work produced by someone through the mode of truck transportation in order to send goods from the place of origin to the destination in intact condition and on time due to the sale and purchase of goods between the sender and the recipient of the goods.

Dangerous Goods

According to the European Agreement A.D.R. 9 classes of hazardous substances have been formed. Dangerous goods are goods which, by their nature, can cause damage to other goods on board, can cause injury to the clamp of the ship's engine rotation itself, can endanger the life or health of the crew, or can affect the stability of the environment. In order to standardize the method of packaging, storage, transportation, handling, etc., a code has been developed to classify dangerous goods as follows:

Table 2 Classification Of Dangerous Goods

CLASS 1 – EXPLOSIVES	
Division 1.1	Substances or articles presenting a risk of a major explosion.
Division 1.2	Substances and materials that have a large projection hazard bu are not a major explosion hazard.

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Division 1.3	Substances and materials presenting a fire hazard and a smal explosion hazard or small projectile hazard or both.
Division 1.4	Substances or items that pose an insignificant risk.
Division 1.5	Very insensitive substances or articles with an overall risk o explosion.
CLASS 2 – GAS	
Division 2.1	Flammable gas
Division 2.2	Non-flammable gas.
Division 2.3	Gas beracun.
CLASS 3 – FLAMMABLE LIQUIDS	
Division 3.1	Flammable liquid with a flash point below -18 C.
Division 3.2	Flammable liquid with a flash point between -18 C and +23 C only
Division 3.3	Flammable liquid with a flash point between +23 C and + 61 C.
CLASS 4 – FLAMMABLE SOLIDS	
Division 4.1	Flammable solid.
Division 4.2	Spontaneously flammable solid.
Division 4.3	Substances which, in contact with water, emit flammable gases.
CLASS 5 – OXIDIZING SUBSTANCES	
Division 5.1	Oxidizing agent.
Division 5.2	Organic peroxide.
CLASS 6 – POISON	
Division 6.1	Very toxic substance.
Division 6.2	Infectious substance.
CLASS 7 – RADIOACTIVE SUBSTANCES	
CLASS 8 – CORROSIVE MATERIAL	
CLASS 9 - OTHER DANGEROUS GOODS	Goods or other objects that are considered to be dangerous bu are not included in the 8 (eight) classes mentioned above Possibility of causing danger to humans (officers), ships, or the environment if not handled properly.

Source : *The Carriage of Dangerous Goods in the European Union* 2017

RESEARCH METHOD

This study uses qualitative research methods. The informants of this research are four employees of PT Mandala Samudera Trans Semarang selected using a purposive sampling technique. The data are obtained from interviews with the four informants conducted once per informant. Interview data are processed using the QSR NVivo 12 application.

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RESULTS
FINDING AND DISCUSSION
Choosing Shipping Line

After going through the coding stage, the QSR NVivo 12 application produces a project map, matrix coding query, and coding comparison.

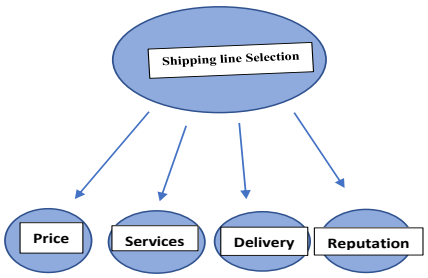


Figure 1: Results of the project map for selecting shipping services
Source: NVivo 12 Application.

The project map above shows that there are 4 factors to be considered in choosing a shipping service for the export of dangerous goods, namely price, service, delivery, and reputation.

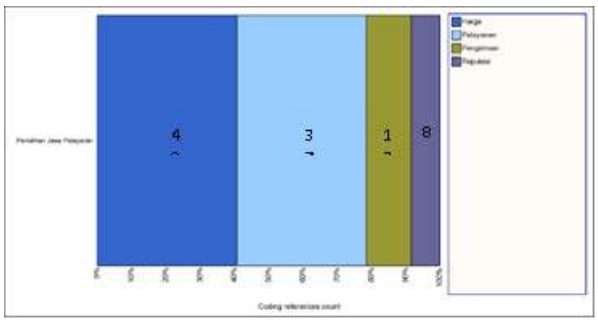


Figure 2: The results of the matrix coding query for selecting shipping services
Source: NVivo 12 App

Price

Price being the number one factor that PT Mandala Samudera Trans Semarang considers most in choosing shipping services for the export of dangerous goods with a matrix coding query percentage value of 40.98%. Price is the amount of money charged for a product or service or the amount of value that customers exchange for the benefits of having or using a product or service. PT Mandala Samudera Trans Semarang will look for shipping lines that offer the lowest price rates when they first receive a delivery order. The

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negotiable price of services is also favored by PT Mandala Samudera Trans Semarang. Cheap and negotiable prices are expected to get an appropriate price between PT Mandala Samudera Trans Semarang and shipping service companies.

Services

The second factor to be considered in the export of dangerous goods is the service factor with a matrix coding query percentage of 37.70%. Service quality is the level of compliance with requirements, i.e customer requirements. Service is any activity that is intended to provide satisfaction to customers. The results of interviews with 4 informants state that the criteria for good shipping lines service include shipping capabilities in providing online schedule and online booking systems, the ability to provide shipping slots, being responsible when receiving complaints and accuracy in processing the required export documents. The application of information technology systems can encourage the performance of freight forwarders to be more effective and efficient.

Delivery

The shipping factor is the third factor that PT Mandala Samudera Trans Semarang considers in choosing shipping services with a matrix coding query percentage of 13.11%. PT Mandala Samudera Trans choose shipping lines that provide quality in services in accordance with existing regulations and protocols. The protocol is in the form of special staff who have certification in managing dangerous goods and shipping service companies that comply with international regulations for handling dangerous goods in dangerous goods export activities. Collaboration with shipping services that understand and comply with regulations for handling exports of dangerous goods will support smooth export activities and create customer satisfaction from PT Mandala Samudera Trans Semarang. Timeliness of delivery is also a matter of concern to the company.

Reputation

The company's reputation factor is the last factor considered by PT Mandala Samudra Trans in choosing shipping lines with a matrix coding query percentage value of 8.20%. Basically, the company's reputation is an award obtained by the company because of the advantages that exist in the company, namely the ability possessed by the company so that the company will continue to develop itself to continue creating new things to meet consumer needs. Based on information from sources, the reputation of the shipping service company in question is a company that has a good reputation and has good performance so that it rarely or never makes fatal mistakes such as errors in shipping and loss of goods that are detrimental to exporters or freight forwarders.

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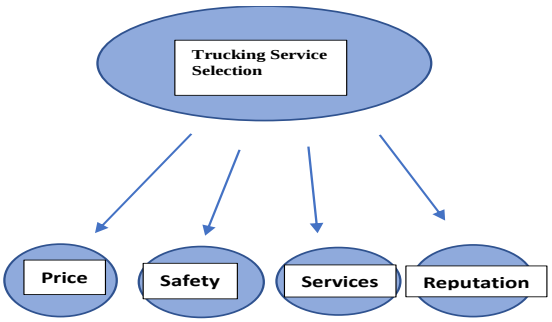


Figure 3: Results of the project map for selecting trucking services
Source: NVivo 12 App

Choosing Trucking Services

The results of the project map regarding the selection of trucking services produce 4 factors that influence PT Mandala Samudera Trans Semarang in choosing trucking services, namely price, safety, service, and reputation.

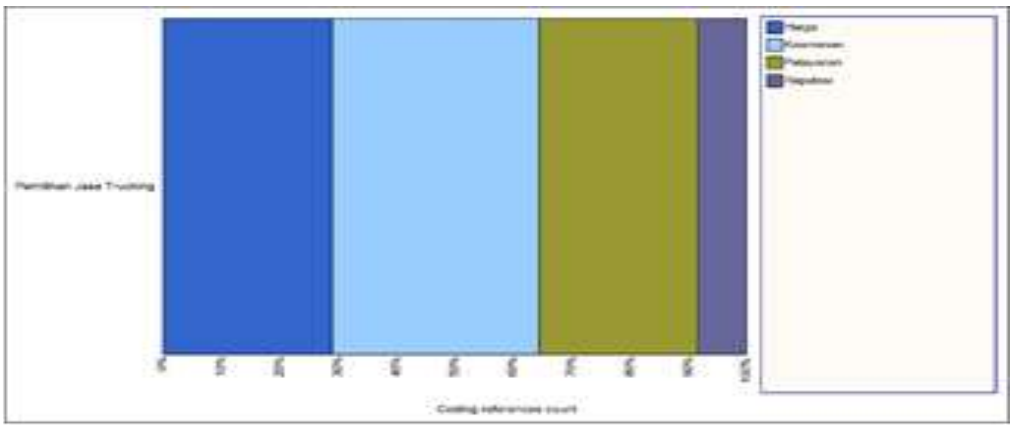


Figure 4: The results of the matrix coding query for selecting trucking services
Source: NVivo 12 App

Safety

The safety factor is the most influential factor to select trucking services to be used. This can be seen from the results of coding via nvivo 12 with a matrix coding query presentation of 35.42%. Security in this context is the ability of trucking services to deliver goods from the shipper's warehouse to the port of loading or shipment port. Security in the delivery of dangerous goods really needs serious consideration related to the nature of those dangerous goods which easily react to certain compounds and can cause damage to certain objects or the surrounding environment which results in losses.

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Price

Price is the second factor to be considered in choosing a trucking service for the export of dangerous goods with a matrix coding query percentage of 29.17%. Price is an influential factor because exporters want low service costs. Low costs can reduce the selling price of exporters' products.

Services

The third factor in selecting trucking services for the export of dangerous goods is the service with a matrix coding query result of 27.08%. Service is tried to reach perfection in order to achieve customer desires or expectations. Service in this case is defined as a service provided by trucking services in the form of the ability to provide trucks, timeliness in shipping goods, fast response, the ability of trucking services to apply technology and information systems, responsibility when receiving complaints, and hospitality employees' performance.

Reputation

Reputation is the last factor to be considered in determining trucking service selection for export of dangerous goods with a matrix coding query percentage of 8.33%. PT Mandala Samudera Trans Semarang chooses a reputable trucking service company and has experience in shipping containers.

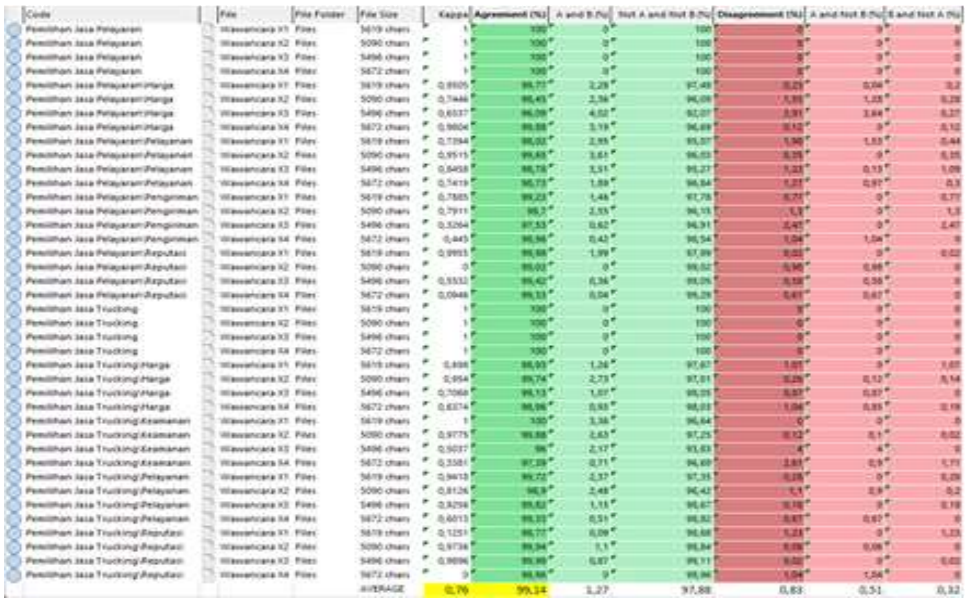


Figure 5: Coding comparison query results

Source: NVivo 12 App

In this study, the output of the coding comparison query and the calculation of the average Kappa coefficient and the percentage of agreement can be viewed. It is seen that

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the average Kappa coefficient in this study is 0.76 or the percentage of agreement is 99.14%. The interpretation of the Kappa coefficient value is in regard with guidelines for the interpretation of the Kappa value and it is concluded that with a Kappa coefficient = 0.76 which exceeds 0.75, the reliability of this study is classified as Excellent Agreement.

CONCLUSION

Based on the results of research regarding the identification of factors for the selection of shipping services and trucking services by PT Mandala Samudera Trans Semarang for the export of dangerous goods, the conclusion is drawn below.

The results of the analysis using the Nvivo 12 software show that there are 4 factors (namely price, service, shipping/delivery , and reputation) considered by PT Mandala Samudera Trans Semarang as a freight forwarder in determining shipping services for the export of dangerous goods. The price factor is the number one factor in determining shipping services for the export of dangerous goods at PT Mandala Samudera Trans Semarang with a matrix coding query percentage of 40.9. In relation to trucking services, the results of the analysis using the Nvivo 12 software show that there are 4 factors (namely price, service, safety, and reputation) considered by PT Mandala Samudera Trans Semarang as a freight forwarder in determining trucking in the export of dangerous goods. The safety factor is the number one factor in determining trucking services for the export of dangerous goods at PT Mandala Samudera Trans Semarang with a matrix coding query percentage of 35.42%.

SUGGESTION

The following are suggestions to PT Mandala Samudera Trans Semarang and further researchers:

a. For PT Mandala Samudera Trans Semarang.

The results of this study provide input to PT Mandala Samudera Trans Semarang to select shipping and trucking service companies carefully and with full consideration and always pay attention to the wishes of its customers so that they can continue to compete with other freight forwarders.

b. For shipping service companies

In this study, service provided by shipping line is the factor mostly considered by PT Mandala Samudera Trans Semarang in choosing shipping services. Shipping services not yet implementing an information technology system such as an online booking system in it, should start developing an information technology system within their company. Investment for online systems is indeed quite with high cost, but along with current

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technological advances, this development will provide benefits and high added value for the company.

c. For trucking service companies

The responsibility of a trucking service company is to deliver consumer goods in a safe condition from shipper's warehouses to shipment port and vice versa. Trucking service companies must always pay attention to safety in shipping any export commodities. In Indonesia, investigations were carried out by the National Transportation Accident Commission (KNKT) in 2020 in which land accidents are the most common. Preventive action should be taken by paying serious attention to things such as condition of the vehicle, the skill and condition of the driver, complete vehicle documents as well as obeying traffic rules.

d. For further research.

Further research can develop this research by examining the factors for choosing shipping services or trucking services from the point of view of exporters and importers who carry out export/import management independently without using freight forwarders.

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