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EFFICIENCY OF ANIMAL FOLDING CONTAINER / GOODS CONTAINER (CARGO) SUPPORTING SEA TOLL

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ABSTRACT

The islands in Indonesia can only be connected through the seas between the islands. The sea is not a separator, but a unifier of various islands, regions and regions of Indonesia. Only through inter-island inter-coastal relations can the unity of Indonesia be realized. Shipping that connects the islands is the lifeblood of life as well as unifying the nation and state of Indonesia. The Port of Tenau Kupang is a fairly large sea port in the province of East Nusa Tenggara. Throughout the year, ships arrive at the port to transport various kinds of goods. One of the cargoes loaded at the port dock is general cargo. At this time, almost all general cargo is shipped using containers because it is considered safer during transportation and the loading process is faster. Therefore, loading of containers into ships has to be carried out using ship's cranes, but sometimes also assisted by mobile cranes from land. Thus, the time for unloading containers from ships is relatively long. The purpose of the voyage by bringing beef cattle other than to Surabaya is to Banjarmasin. Wooden ships departing from ports of origin such as Bima and Sheets to Banjarmasin, in addition to carrying cattle, also carry other agricultural products such as shallots, soybeans, and salt. Meanwhile, ships departing from the destinations of Bima and Sheets to Surabaya generally carry corn, soybeans, and cattle. The folding container model for transporting animals from Kupang - Surabaya supports the marine highway. . The purpose of this research is the selection of animal folding container models as a supporter of the Kupang – Surabaya sea toll route help expedite logistics delivery and help the welfare of the community, both in food delivery (living things, even ready-to-eat), while making containers as a special model for animal loads has a huge impact on the distribution of food needs. Based on the binomial logit method in the selection of modes here, it will get what percentage of the choice of modes to be selected, then simulated with the degree of preference of users of transportation mode services which are analyzed using the stated preference method. The research method is a mix of descriptive - quantitative methods. The result of this research is a folding container ship transportation model as a supporter of the marine highway.

Keywords: Folding Container,Model Transportation.

1. Introducing

Nusa Tenggara East has one international port, namely the Tenau port in Kupang as the central port in Nusa Tenggara East, nine national seaports, 11 regional ports and 21 local ports visited by passenger ships, ships serving the community and goods needed in Nusa Tenggara East . Livestock are usually transported via general cargo ships, while small ships transport animals from regional ports for the transportation of livestock in the East Nusa Tenggara area as a mode of distribution via waterways aimed at large ports which are considered less efficient in terms of transportation due to transportation. which are relatively few and still use old methods such as transportation and unloading in one hold, it will affect the ship. Later it will take a relatively long time and place in the distribution of animals, which has an impact on the transportation of animals in small quantities, the international port of Kupang itself has never had large ships that have entered to transport livestock products, even though large ships and facilities are needed to transport animals. livestock from Kupang to Surabaya as well as from Surabaya to Kupang. Currently transporting livestock is transported by sea toll ship with a capacity of 550 cattle originating from Kupang to Jakarta. Meanwhile, ships carrying containers, especially livestock, do not yet exist from kupang to surabaya. In 2000, transportation of livestock, especially cattle, was carried out using freight ships.

Ships that carry basic necessities for residents in Nusa Tenggara East, the use of folding containers is very useful because it has two functions, namely as a carrier for livestock and

logistics materials. In the use of folding containers for transporting livestock, they will be put into containers and have been arranged in the placement of the livestock, as for the auxiliary components in the folding containers for transporting animals such as places to eat, places to drink, and places to collect feces. The use of folding containers will greatly facilitate checking the condition of animals, care, feeding, therefore the use of folding containers is a good transportation tool in terms of efficiency in transporting, unloading, and moving containers from ships to trucks directly will save time and also costs at the port. The potential demand for container sea transportation will grow rapidly in line with the development of industrial processing in regional development in an integrated economic strategy and regional strategy or economic corridor in the Master Plan for the Acceleration and Expansion of Indonesian Economic Development in Eastern Indonesia. There has been a change in the function of the port into a multipurpose port serving conventional transportation and container transportation. The problem that arises is that the dock and loading and unloading facilities require adjustments except for the special container ports of Makassar and Bitung, as well as the limited land for the development of land-side facilities. The geometric condition of the connecting road to the port and hinterland has not been planned to serve container transportation. Ports of collectors and feeders need revitalization to adapt to existing demand (Denny Siahaan, et.al ,2016

2. Identification of Problems

Problems Affecting the Length of Delivery of Livestock with Containers

Separately to evaluate the quality of sea transportation and land transportation services. In modern shipping with large ships set on east-west and south-north shipping routes, the cost structure of sea and land transportation is usually different. Most shipping lines operate from port services to port of destination, while land transportation is outsourced to subcontractors. Therefore, freight forwarders can experience different levels of performance for sea and land transportation (Yuen et.al, 2015). Key service characteristics in the container shipping industry (CLS) and their impact on customer satisfaction. Mapping service quality dimensions to a new set of service characteristics based on the latest priorities of container shipping companies (Bortfeldt, Andreas.; Wascher, Gerhard. 2017). The data used to analyze by collecting online surveys are regressed in a non-linear model. The results show that the top three service characteristics that affect customer satisfaction are the quality of customer service representatives, the quality of digitization and the quality of internal sales representatives. The results of the online survey show that the ability to offer long-term rates is not as effective in increasing customer satisfaction as is usually perceived; digitization is the main agenda of ship shipping managers (Enna hirata., 2019) Based on the background that has been described previously, the main problems obtained are as follows:

How does the effectiveness of an animal delivery cycle affect the use of folding containers.

How long is the time efficiency in the process of loading and unloading folding containers.

How much does it cost to use a folding container compared to a regular container.

What type of ship transportation mode should be used to be more effective in terms of time and cost meters?

Literature review

2.1 Definition of the Sea Toll.

The definition of sea highway is a toll road built on the sea in the form of a sailing lane. This toll road is a concept that is promoted to support the logistics transportation process in Indonesia which is currently being intensively implemented by the government, so that the distribution process of goods will be easier and smoother and can be more evenly distributed throughout Indonesia, especially for food. This convenience and smoothness is expected to have an impact on the prices of basic commodities more evenly throughout all regions in Indonesia. The concept of the sea toll that the Indonesian people need to know is that the sea toll does not necessarily create a toll road above the sea, but that the sea toll is a barrier-free shipping lane that connects all ports in Indonesia (I Gede Raka Subawa. 2018).

The regulatory framework that forms the basis for the sea highway program is Presidential Regulation No. 106 of 2015 concerning the obligation to provide public services (Public Service Obligation / PSO.) for the transportation of goods at sea. Since starting in November 2015 with three routes, within three years it has grown to 18 (eighteen) routes. Of the 18 routes, 7 (seven) routes are carried out by PT. Indonesian National Shipping (PT. Pelni).

2.2 Definition of Container

Container (English: ISO container) is a crate or box that meets technical requirements in accordance with the International Organization for Standardization (ISO) as a tool or equipment for transporting goods that can be used in various modes, ranging from road mode with container trucks, trains and crate ships. sea packing. The weight of the container itself varies, but has a maximum weight of each, such as the maximum weight of a 20 feet dry cargo container is 24,000 kg, and for 40 feet (including high cube containers), it is 30,480 kg. So the net payload weight that can be transported is 21,800 kg for 20 feet, 26,680 kg for 40 feet. With the maximum weight, it is divided into 3 container sizes.

Durability of the Long Life of Folding Containers

The durability of a container can be measured in terms of the care performed on the container and the materials used in its manufacture. Maintenance is an activity to maintain or maintain factory facilities/equipment and make necessary repairs or adjustments/replacements so that there is a satisfactory production operating condition in accordance with what is planned. The purpose of maintenance is to keep the existing system running as it should and to control costs for both prevention and repair in the event of damage, prevention, and repair if damage occurs.

2.4 Container Ship

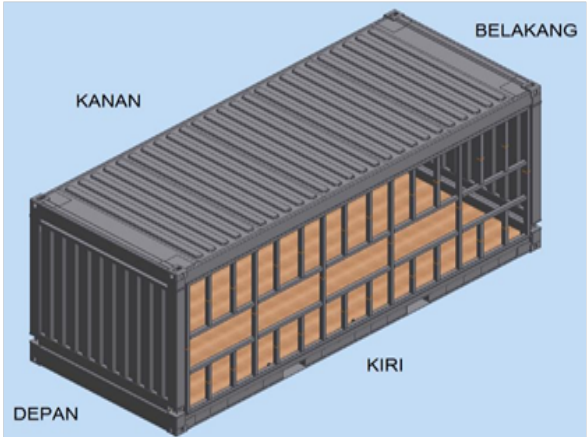
Container ship or cellular ship is a ship specifically used to transport standard containers. Has a cavity (cells) to store standard size containers. The container is lifted onto the ship at the container terminal by using a special crane/crane that can be done quickly, both cranes on the dock, as well as cranes on the ship itself.

2.5 Container Role

This study aims to determine the development of the use of containers in the export and import of agricultural commodities at the port of Tenau Kupang, East Nusa Tenggara for the next five years, find out the financing in the container handling system, and identify factors that are considered by the owners of goods so that they use container services. This research was conducted at the port of Tenau Kupang, East Nusa Tenggara. Data collection methods used are observation, interviews, and document studies. The data were analyzed descriptively using frequency and percentage distribution tables, and time series analysis using the least squares method. The results show that the volume of exports and imports of agricultural commodities at the port of Tenau Kupang, East Nusa Tenggara will continue to increase for the next five years which will automatically increase the use of export and import containers in the next five years, financing in the container handling system at the port. Tenau Kupang, East Nusa Tenggara based on the status of its movement, namely the cost of handling LCL (Less Than Container Load) containers is higher than FCL (Full container Load), or an increase of 11.14% for 20 feet containers, and 11.87% for 40 feet containers. . Factors that are considered by owners of goods using container services include: very small risk of damage, very fast delivery time, maintaining quality of goods, large shipping volume, and loading and unloading speed.

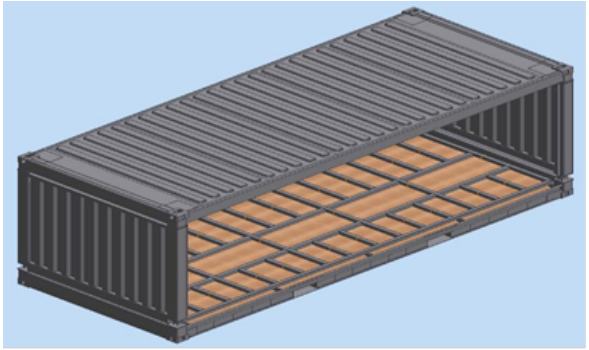
The framework of the container to be used in the transportation of animals.

In making this special animal folding container frame, it is a folding container design that will be used in transportation where in this container model the livestock to be transported will be put into the container and transported directly to the ship.



Picture 1. Container Left and Right Wall Folding

When the folding container is not in use, the container can be folded to be compact and can save accommodation space on the ship



Picture 2. Right Wall Folding on Folding Cotainer

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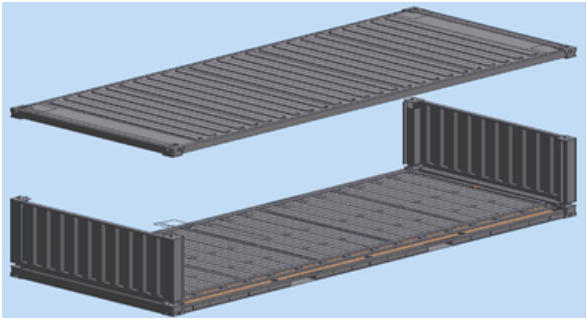
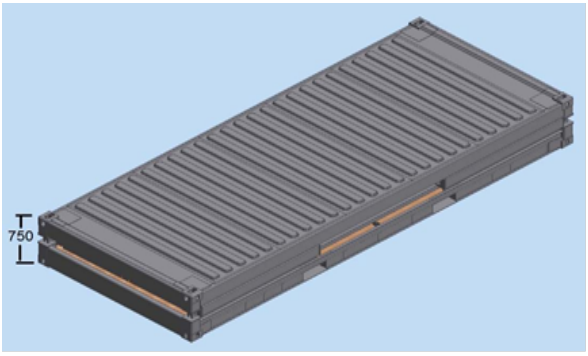
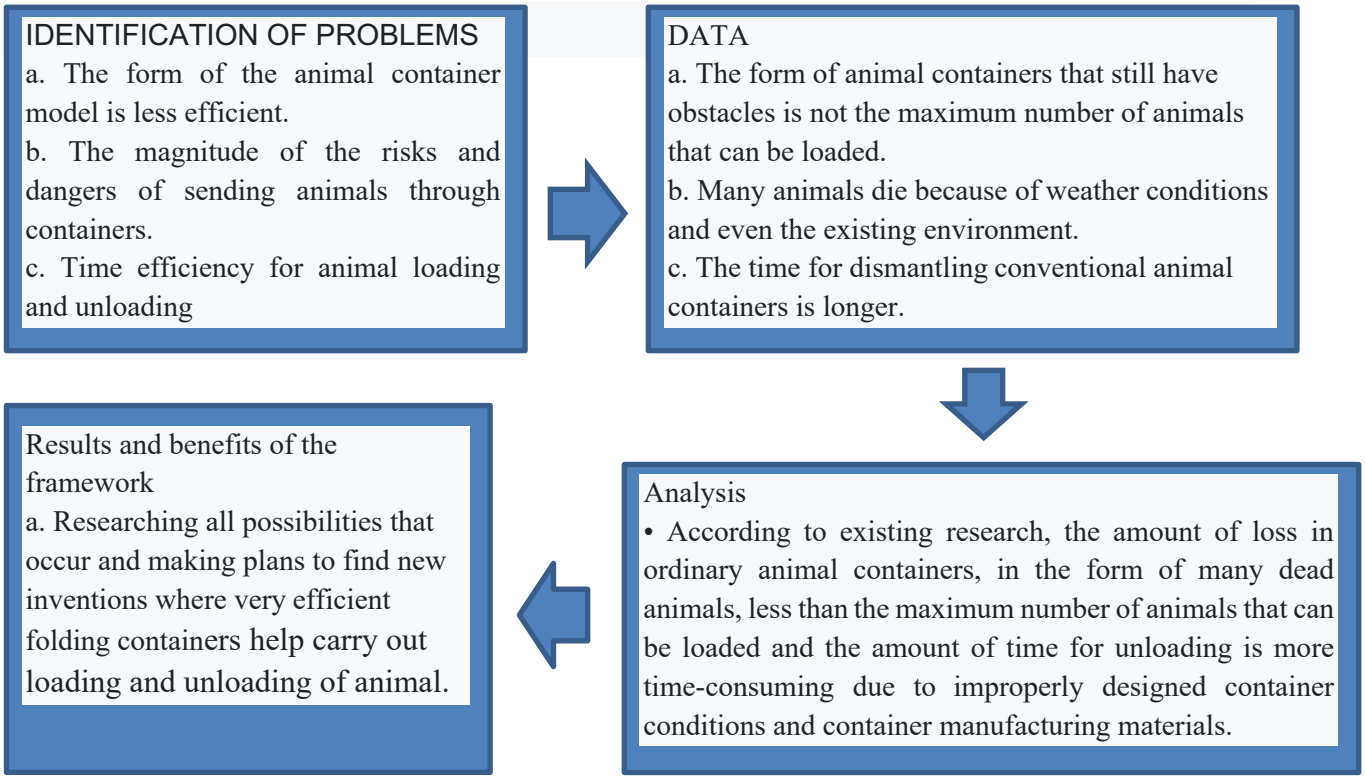


Picture 3. Folding Container Top Fold



Picture 4. Compact Model When It's Folded

The Mindset of Making Folding Containers. Previous studies have been carried out to seek efficient, safe, and high impact container forms that are useful, and are less likely to result in losses. Therefore, it is necessary to examine the shape of the container, its size, the material of manufacture, and the efficiency of the container. In terms of the frame of mind, first do a situation plan before carrying out future activities. In this study using the framework of thinking that has been arranged in the table. In the framework of this research, it has gone through stages starting from the identification stage, the data collection stage, the analysis stage, the results stage, and the final results have benefits.



4. Discussion

a. The shape of the animal container model is less efficient

The shape and design of the existing container is different from the design of the special animal folding container made in this study. The AMSA (Australia Maritime Safety Authority) standard animal special container is a special animal container that has been widely used overseas, including in Australia where the special animal

container is used to transport livestock, be it cattle, horses, sheep or camels. Until now, the special animal containers are still used for animal shipments. The cost of these special animal

containers is generally equivalent to the cost of space on a conventional cattle ship. With this animal container model, research will be carried out by changing the structure of conventional containers into special folding containers for animals, so that in Indonesia it can speed up animal shipments and have an effect on increasing the economy.

b. The magnitude of the risks and dangers of sending animals through containers

Animal folding container is a container/container specifically designed to load live animals from the loading port to the unloading port whose design is different from the general container. The shape of this container is designed to have an open building so that the animals to be loaded can move smoothly and can be ensured to live to their destination with a small risk of death. This animal container has a building structure that can be folded so that it is easy to use, can save loading space and make the animals to be transported can adapt safely without any stress effect.

c. Time efficiency for animal loading and unloading

a) To maintain quality and protect cattle transported in special animal containers by paying attention to logistical aspects. Minimize the risk of animals being injured or disabled in shipping to their destination.
b) Facilitate the unloading and loading of animals from the dock to the ship or from the ship to the dock.
c) Minimize the risk of cattle which are highly dependent on handling during travel and sanitation systems in containers.
d) Creating a high capacity for cattle in a container that can be transported quickly and easily from the ship to the Slaughterhouse (Slaughterhouse) or from the producing area to the ship.
e) Mode of transportation that can transport quickly

Stages of Making Folding Containers That Are Made into Models and Modes

The stages of making a folding container are as follows:

1. Project engineering makes a muster schedule
2. Matrial Process (Making components)
   - Execution
   - Material cutting
   - Formation of walls
   - Formation of folding structure structure
   - Making the edges or corner custing consists of eight parts in each top corner there are four parts and in each corner at the bottom of the folding container there are four parts
3. Material process
   Cutting material includes container walls, container structures, corner custing
4. Welding settings
   Collected, assembled like a container and then welded. All the walls used in the manufacture of folding containers and including the framework will be subjected to a setting welding method of the folding containers including the walls of the container, both the right wall or the left wall of the container and the front and rear doors are all set welding again.
5. Leak test
   For testing the leak test, a spraying method is used using water media.
6. Load test
   To test the finished container is given a load of 20 tons and lifted using a crane and lift the ends.
7. Blasting and painting
   Blasting spraying using white steel sand to clean the dirt from the weld. Then for the painting process there are 3 stages, namely primer, primary again stage 2, and top primer with a thickness of 200 microns. By blasting each part and the frame of the folding container, all the dirt in the welding process will disappear and make it easier for the painting process to be carried out on the folding container.

   From the results of making animal folding containers, it can be used to transport animals more effectively and efficiently both loading and unloading time and the cost of shipping livestock.

5. Suggestion

We recommend that the mode of transportation of ships that carry animals from Kupang to Surabaya or to other destinations is more effective and efficient both cost and loading and unloading time by using folding containers.

6. Conclusion

The existence of the Sea Toll Program where the study location of the Tenau port was inaugurated in October 2022 to become a sea toll port, so to support the sea highway it is recommended to transport animals with folding

containers found in this study because it will be more efficient both in terms of time and the risk of death to animals.

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