

The Impact of The Ship's Seaworthiness on Marine Safety Through Mediation of Navigation Aids (A Survey to The Property Vessels of PT. Peln and PT Spil, Tanjung Priok Port on 2018)

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Abstract

This research was conducted in the Port of Tanjung Priok, especially on vessels owned by PT Peln and PT Spil using quantitative methods, with a total of 40 research samples taken. The data was collected through instruments in the form of statement sheets with Likert scale models that have been tested. This study uses technical linear regression analysis, normality and path analysis. The results of the study concluded that there is a significant positive influence on the ship's feasibility impact on shipping safety through mediation of navigation aids. The results of the research hypotheses where there is a significant positive influence on the ship's worthiness for shipping safety is 0.444; While the influence on navigation aids on shipping safety is 0.355. The influence on the ship's feasibility on the navigation aid facilities is 0.553; Moreover, the shipping safety through the means of navigation aids is 0.167.

Keywords: Seaworthiness, Aids and Marine Safety.

Introduction

The number of accident cases occurred on board was 83% (Directorate of KPLP-DG Hubla December 31, 2017). There were 31% of the accidents were sunk, 25% of grounded , collisions by 18.27%, and fires by 9.67%. Ship accidents are caused by improper vessels, human error, while the rest of the technicalities are caused by natural conditions, and other factors. This phenomenon shows the quality of human resources (HR) work on board is verynegligible . However, based on the number of cases occured, it shows the lack of skill and discipline in adhering the working rules and procedures of , and the lack of knowledge of the safety management system. To ensure the safety of shipping as a support of

smooth ship traffic on the sea, skilled and capable and ship crews are required. Every ship must be managed by a sufficient and appropriate crew to carry out its duties on board based on its position by considering the amount of the ship, arrangement of the ship and the shipping areas. In addition to safeguarding sailing safety, navigation aids can also be used for other specific purposes, including marking the country's territory on the outer islands, including supporting facilities for safety shipping in the achievement of the National Transportation System (SISTRANAS), that is effective transportation (in meaning congratulations, high accessibility, integrated, orderly, smooth and fast, easy to achieve, timely, comfortable, orderly, safe and efficient). The waters of Indonesia, which cover an area of (+) 5.8 million square kilometers, connect to 17,667 small islands, which require a means of sustenance safety shipping through the installation of Shipping Navigation Supporting Facilities (SBNP) such as the Beu Tower, Beacon Signs (Ramsu), Floating Beaconand Light BouyTo support all applicable rules both Indonesian and international law, there are restrictions (actions that can cause damage or obstacles to shipping navigation aids, shipping telecommunications, and shipping channel facilities), and sanctions (as a result of negligence that causes non-functioning of navigation aids and shipping channel facilities. Sea worthiness is the state of the ship that meets the requirements of ship safety, prevention of pollution of ship safety requirements, prevention of water pollution from ships, guarding, load lines, loading, passenger health and welfare of the ship's crew, vessel legal status, safety management and pollution prevention from ships, and management safety of ships to sail in certain waters.

According to D.A. Lasse (2014) the ship's feasibility is the fulfillment of the requirements of material, construction, building, machinery and electricity, stability, arrangement and equipment including radio, ship electronics, all of which are proven by certificates. Shipping Navigation Assistance Facility (SBNP) is a facility built or formed naturally that is outside the ship that serves to assist the

navigator in determining the position and / or bow of a ship and notifying shipping hazards and / or obstacles for the purpose of sailing safety. Shipping lanes are part of the natural and artificial waters which in terms of depth, width and other barriers that should be considered to safety shipping. The ships are always sailing on the shipping lanes so shipwrecks accidents such as collisions, grounded, and drowning can be protected around the shipping lane. The location of the ship that has experienced a disaster, can cause sailing safety disruption for other vessels so that it needs to be held appointment and / or to remove of the ship frame. Indonesian waters covering an area of (+) 5.8 million square kilometers (km²), connecting to 17,667 of small and large islands, essentially needs to support shipping safety through the installation of Shipping Navigation Support Facilities (SBNP) such as Beacon Tower, Light Beacon, Floating Beacon and Life Bouy. Shipping safety is a business or activity in the shipping sector to create transportation in the water safely, quickly, smoothly, orderly, regularly, comfortably and efficiently with the aim of protecting the life, property, marine environment and the ship itself. Compliance with ship safety requirements must be checked by ship safety inspectors who have the qualifications and expertise in ship safety. Data analysis method used in this study is path analysis to see the direct and indirect effects between endogenous variables and exogenous variables. The intended endogenous variable is the Sailing Safety variable (Y), while the exogenous variable is the Ship Worthiness variable (X1) and the Navigation Assistance Variable (X2). The population in this study were PT Pelni and PT Spil ships located in the port of Tanjung Priok with a fleet of 40 ships. Probability Sampling method is used in this study with Random sampling technique.

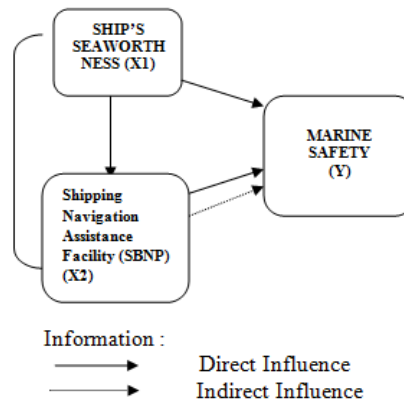


Figure 2.2
Conceptual Framework

Results And Discussion

1. The direct influence of the ship's seaworthiness on the safety of shipping.

From the results of the study, it was proven that there was a direct influence of the ship's seaworthiness on shipping safety. The closer relationship between ship's marine feasibility variables and shipping safety is reflected in the strong value of the calculation of the correlation between the ship's sea worthiness variable (X1) and the shipping safety dependent variable (Y), which is 0.645. From the calculation of SPSS 24.0, the tally obtained is 3.174 at α (0.05) obtained t table 2.021, so that H_0 is clearly rejected and H_a is accepted. This shows that the ship's sea worthiness variable (X1) has a positive influence on shipping safety. Which is the ship's feasibility is strictly regulated in law no.17 of 2008 concerning shipping article 1 paragraph (10), explaining the feasibility of ships is the condition of ships that meet the requirements of ship safety, prevention of pollution from the ship, guarding, manufacture, health, welfare of the crew as well as passengers and the legal status of the ship to sail in certain waters.

2. The direct effect of Shipping Navigation Assistance Facilities on Safety shipping. The results of this study was that there was a direct influence of the Shipping Navigation Assistance Facility on shipping safety. The close relationship between Sailing Navigation Supporting Facilities (X2) to shipping safety (Y), reflected in the magnitude of the correlation coefficient that is equal to 0.475 means that the relationship is very strong. With the help of SPSS 24.0 calculations, the t count obtained is 2.541 at α (0.05) and $t_{table} 2.021$ so that H_0 is clearly rejected and H_a is accepted. This shows that the Navigation Assistance (X2) variable has a positive influence on Shipping Safety (Y) which agrees with Wiji Santoso, Aji Ratna Kusuma (2013) Shipping Navigation Assistance Facilities (SBNP) play an important role in the world of international and domestic shipping. The Shipping Navigation Assistance Facility (SBNP) also opens access and connects the island region, both developed and isolated areas. As an Archipelago country, Indonesia is really need a Shipping Navigation Assistance Facility (SBNP). For the purpose of sailing safety and smooth ship traffic in areas that have dangerous navigation activities or jeopardize sailing safety and zoning which is determined by labeling a Navigation Assistance Facility (SBNP) in accordance with applicable regulations and broadcast through the Beach Radio Station (SROP) and Indonesian News sailor. In addition, it needs to be informed about water and weather conditions such as the presence of storms which results in high waves and heavy currents changes.
3. The direct influence of vessel sea worthiness on the navigation aids as a tool.

From the results of the study it was proven that there was a direct influence of ship sea worthiness on navigation aids as a tool for the closeness of the ship sea worthiness (X1) variable relationship to navigation aids as a tool (X2), reflected in the magnitude of the resulting correlation coefficient of 0.704 means the relationship is very strong. With the help of SPSS 24.0 calculation,

the count obtained was 4.091 at α (0.05) and $t_{table} 2.021$ so that H_0 was clearly rejected and H_a accepted. This shows that the ship's Sea worthiness variable (X1) has an effect on Shipping Navigation Assistance as a tool (X2) which agrees with Riva "Atulah Adaniah Wahab (2014) Ship feasibility is a condition of the ship where the vessel is in the best condition and performance in carrying out activities transportation of humans and goods that have fulfilled the requirements set by the laws and regulations of the world. Ship safety also depends on navigation, such as the Sailing Navigation Assistance Facility (SBNP) as a supporting element in the shipping safety. Shipping Navigation Assistance Facility (SBNP) consists of sea signs that serve as a guiding tool for ships sailing to avoid navigation hazards. Navigational arrangements are carried out to overcome the occurrence of accidents or the high waiting time of ships through adjustments to port facilities and safety of shipping facilities. Shipping channel facilities for increasing traffic density. The Navigation Directorate as the Technical Directorate in the Environment of the Sea Transportation Directorate General carries out the duties of Shipping Safety which is mandated in Law Number 17 of 2008 concerning Shipping. The Shipping Navigation Assistance Facility (SBNP) is one of the responsibilities for the implementation of shipping safety as stipulated in the Minister of Transportation Regulation Number PM 25 of 2011 concerning Shipping Navigation Assistance Facilities.

4. Indirect influence of ship feasibility on shipping safety through mediation of the Navigation Assistance Facility as a tool.
 - a. The indirect effect of Ship Sea worthiness on the Sailing Safety of 0.444 through the mediation of the Shipping Navigation Assistance Facility (SBNP) is $0.470 \times 0.355 = 0.167$.

- b. The total effect of Ocean Safety on Shipping Safety through mediation of the Navigation Assistance Facility as a tool, the direct influence of which is indirect effect which is $0.444 + 0.167 = 0.611$.

Based on the results of the calculation, it is known that the value of direct influence is 0.444 and indirect effect is 0.167 which means that the value of direct influence is greater than the value of indirect effect. This result shows that indirectly X1 through mediation X2 has no significant effect on Y.

Conclusion

Based on the results of the analysis of the first study hypothesis where there is a direct influence of Ship Oversight (X1) on Shipping Safety (Y) of 19.71% with a path coefficient of 0.444, that has a positive effect on the ship's Ship ability of Sailing Safety so that the ship is feasible to support shipping safety.

The results of the second study hypothesis analysis where there is a direct influence of Shipping Navigation Assistance Facility (X2) on Shipping Safety (Y) of 12.6% with a path coefficient of 0.355, where the Sailing Navigation Facility (SBNP) in good condition will support the safety of shipping traffic so that creating shipping safety. The results of the third study hypothesis analysis is that there is a direct influence of Ship Oversight (X1) on Shipping Navigation Assistance (X2) of 30.58% with a path coefficient of 0.553, it shows positive where the ship is feasible and the navigation aids (SBNP) are in good condition that can help the shipping channel to be good so that the safety of shipping will appear. The results of the analysis of the fourth study hypothesis is that there is an indirect effect of Ship Oversight (X1) on Shipping Safety (Y) through the Navigation Assistance Facility (X2) of 2.78%. From the findings of this study that shipping safety is directly affected by the variables of Ship Traffic, and Shipping Navigation Assistance Facilities (SBNP), and indirectly by Ship Worthiness and Shipping Navigation Assistance Facilities (SBNP). Therefore, to optimize

shipping safety in Tanjung Priok Port optimization of the two variables. can be applied.

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