IJES : International Journal of Engineering and Science
Volume. 1 Nomor. 1, April 2025
e-ISSN: XXXX-XXXX; p-ISSN: XXXX-XXXX, Page. 43-62
Available Online at : https://e-jurnal.unimar-amni.ac.id/index.php/IJES

Analysis of the Role of the Port Mastery Office and Batam Special Port Authority Towards Shipping Safety

Namr Arad
AMNI Maritim University, Indonesia

Abstract : The purpose of this study was to determine whether there is or is not the influence of Guidance, Supervision of KSOP and Vessel Traffic Service on Shipping Safety by using a non-probability sampling technique, namely by incidental sampling. In the world of shipping, which has its own characteristics and advantages, it needs to be developed by taking into account its capital-intensive nature, so as to be able to improve services more broadly, both domestically and abroad. It is hoped that under any conditions the ship can still operate. For this reason, it is necessary to measure the level of shipping safety related to pilotage, KSOP supervision, and vessel traffic service. This study aims to determine the effect of Guidance, KSOP Supervision and Vessel Traffic Service on Shipping Safety. This study also aims to analyze the factors that have the most dominant influence on shipping safety. This research was conducted using a questionnaire method to 67 respondents. The analysis technique in this study uses multiple linear regression analysis. The formulation of the regression in this study is as follows: Y = 1.052+ 0.357 X1 + 0.272 X2 + 0.220 X3 + μ . The results of the multiple regression study show that there is a partial positive effect of Guidance on Sailing Safety, KSOP Supervision on Sailing Safety and Vessel Traffic Service on Shipping Safety. The influence of the three research variables is very strong with a correlation value of Adjusted R2 = 0.627.

Keywords : Guidance, KSOP, Supervision.

1. BACKGROUND

The unitary state of the Republic of Indonesia as referred to in the Law of the Republic of Indonesia Number: 17 of 2008 concerning Shipping, an archipelagic country with the characteristics of the Archipelago united by a very wide water area with boundaries, rights and sovereignty stipulated by law. Shipping is part of the means of sea transportation as mandated by the Law to be vital in supporting the goals of national unity and integrity. Realizing the importance of the responsibility of the Harbor Master and Port Authority Office regarding Safety in Shipping, Law Number: 17 of 2008 concerning Shipping was born. Responsibility for the safety and security of ships is the responsibility of the Harbor Master and the ship's captain. Various regulations have preceded this legislation, seen from the historical context of the development of the duties and the Harbor Master and Port Authority Office in the port has undergone improvements and enhancements that will raise more clearly the very important role of the Harbor Master and Port Authority Office.

Security and Shipping Safety are very important factors to support the smoothness of sea transportation and prevent accidents where the determination of shipping lanes is intended to ensure the safety and security of shipping by providing corridors for ships sailing across waters followed by marking for navigational hazards. The implementation of shipping lanes which include program activities, arrangement, construction, operation and maintenance are shown to be able to provide services and directions to the parties using sea transportation

Received: January 15, 2025; Revised: January 30, 2025; Accepted: February 10, 2025; Online Available: February 14, 2025

services to pay attention to the capacity and capability of the lane associated with the weight of the ship that will pass through the lane so that it can sail safely, smoothly and comfortably.

Sailorn which has its own characteristics and advantages needs to be developed by considering its capital-intensive nature, so that it can improve wider services, both domestically and abroad. IMO found that according to statistics, as many as 80% of all ship accidents at sea are caused by human error and poor ship owner office management systems. The shipping world always faces the risk of losing lives, property, and environmental pollution. It is expected that in any condition the ship can still operate. One of the most dangerous conditions for a ship is during bad weather. Several methods have been studied to deal with this, including static stability analysis (IMO, 2008) and analysis of the possibility of ship capsizing in bad weather. River transportation accidents that claim many lives and property occur one after another. However, the root cause of sea accidents is in principle the result of regulations by the government, especially the Ministry of Transportation. As a result, the danger of loading always lurks users of sea transportation services at all times. To implement all policies in the field of safety, the company must have a Safety Management System which is a facility for all personnel on land and at sea. The company builds this system following the guidelines and sample documents provided by the Internal Safety Management Code (ISM code). A ship is said to be seaworthy if the requirements for materials, construction, buildings, machinery and electronics of the ship are met, all of which are proven by original certificates.

Beforem doing sailing, must be known the instructions on how to provide assistance, ship accidents, due to collisions, grounding, sinking, fire, collisions, force majeure or natural accidents. Ship maintenance procedures include: (a) when it is time for the ship to dock, (b) annual maintenance, (c) emergency maintenance, (d) quarter-year maintenance. In addition, it is necessary to intervene and shipping associations to work together and always improve safety and prevent ship accidents as much as possible.

2. THEORETICAL STUDY

In this literature review and previous research, theories related to the research questions will be presented, as explained in the previous chapter. In this literature review, concepts and theories related to the material used to solve the problem are presented, namely the theory of Guidance, Supervision of KSOP and Vessel Traffic Service in shipping safety. In previous research, several previous research results related to Guidance, supervision of

KSOP and Vessel Traffic Service in shipping safety will be presented. Starting from the concept of theory and the results of previous research can be used as a formulation of hypotheses and preparation of research tools, and can also be used as a discussion of research results.

Guidance

In Law Number: 17 of 2008 concerning Shipping, Article 1 paragraph (48) states:

The Managerduan is a pilot activity in assisting, providing information advice to the captain about local waters that are important so that navigation can be carried out safely, orderly, and smoothly for the safety of the ship and the environment. In order to maintain the safety of the ship and its cargo when the ship enters the shipping lane, the captain needs a ship pilot who understands in detail about the shipping lane that will be passed. In ship piloting activities, it is one of the efforts to maintain the safety of the ship, passengers and cargo when entering the shipping lane. In Law Number: 17 of 2008 concerning Shipping, which in Article 198 paragraph (1) states that the government can determine certain waters as mandatory pilotage waters and extraordinary pilotage waters. In the explanation of the article, what is meant by "mandatory pilotage waters" is a water area that due to its condition requires pilotage for ships bersize GT 500 (five hundred Gross Tonnage) or more. And what is meant by "extraordinary pilotage waters" is a water area that due to the condition of the waters does not require pilotage but if the Captain needs it, he can submit a request for pilotage services.

The purpose of assigning a pilot on a ship is to provide assistance to the captain in order to ensure the safety of the voyage. Because pilotage is for the benefit of the captain and his ship, then basically the ship pilotage service is carried out at the request of the captain. Indonesia is very interested in pilotage in the Straits of Malacca and Singapore because ships carrying crude oil sail through the Straits of Malacca and Singapore from west to east through Indonesian territorial waters. In reality, these ships are guided by illegal pilots from other countries, this is a loss for the Indonesian nation and violates the country's sovereignty. The role of ship pilotage in the Straits of Malacca and Singapore not only plays a role in the safety of the voyage but can also play a role in providing information if there are illegal activities such as illegal fishing vessels in our territorial waters or activities of loading and unloading people who violate immigration regulations, as well as illegal activities by unloading or loading goods that violate customs regulations, and also by being more careful in navigating

and reprimanding other ships that violate National and International regulations in the territorial waters of Indonesia.

KSOP Supervision

MenRegulation of the Minister of Transportation of the Republic of Indonesia Number PM 36

Known 2012 on the Organization and Work Procedures of the Harbor Master and Port Authority Office, KSOP is a technical implementing unit within the Ministry of Transportation which is under and responsible to the Director General of Sea Transportation. KSOP has the task of carrying out supervision and security at ports as well as regulating, controlling and supervising port activities at ports that are operated commercially. In carrying out its duties, KSOP carries out the following functions:

1. Implementation of supervision and fulfillment of ship seaworthiness, ship safety certification, prevention of pollution from ships

and determination of the legal status of the ship.

2. Implementation of ship safety management inspections.

3. Implementation of supervision of shipping safety and security related to loading and unloading activities of dangerous goods, special goods, hazardous and toxic waste (B3), refueling, orderly embarkation and disembarkation of passengers, construction of port facilities, dredging and reclamation, seaworthiness and seaworthiness, orderly ship traffic in port waters and shipping lanes, ship pilotage and towing, and issuance of Sailing Approval Letters (SPB).

4. Implementation of ship accident inspections, prevention and extinguishing

fires in port waters, handling of marine disasters, implementation of maritime environmental protection and law enforcement in the field of shipping safety and security.

5. Implementation of coordination of government activities at the port related to the implementation of supervision and law enforcement in the field of shipping safety and security.

6. Implementation of the preparation of the Port Master Plan, Work Area and Port Interest Area, as well as supervision of its use, proposal of tariffs to be determined by the Minister.

7. Implementation of the provision, regulation and supervision of the use of land and water areas of the Port, breakwaters, Port pools, shipping lanes and road networks as well as Navigation Aids.

8. Implementation of guarantees and maintenance of environmental sustainability at the port, security and order, smooth flow of goods at the port.

9. Implementation of ship traffic management in and out of the port through ship guidance, provision and/or provision of port services and granting of concessions or other forms to Port Business Entities.

10. Preparation of materials for determining and evaluating operational service performance standards suita port.

11. Implementation of financial, personnel and general affairs, legal and public relations as well as reporting.

Office KSOP has a role as a law enforcer in the field of shipping safety and security and management of administrative affairs, financial personnel, law, and public relations. Ship safety is the condition of a ship that meets the requirements of materials, construction, buildings, machinery and electricity, stability, layout and equipment of auxiliary equipment and radio, ship electronics, which is proven by a certificate after inspection and testing. Shipping safety and security includes the safety and security of transportation in waters and protection of the maritime environment which needs to be implemented carefully through related structures as stakeholders. The seaworthiness of a ship is the condition of a ship that meets the requirements of ship safety, prevention of water pollution from ships, manning, load lines, loading, welfare of the crew and health of passengers and/or crew, legal status of the ship, management of ship security to sail in certain waters. The seaworthiness of a ship is proven by the completeness of technical administrative requirements. Administrative requirements in the form of safety certificates such as nationality certificate, safety certificate measurement letter, ship construction certificate, ship equipment safety certificate, radio certificate and diploma owned, as well as technical requirements such as equipment for supporting safety equipment at sea must first be met in order for the ship to obtain seaworthy status. The seaworthiness of the ship is closely related to the safety of navigation.

ImportantThe role of the Harbor Master in supervising the seaworthiness of ships can be seen in Law Number; 17 of 2008 concerning Shipping, where the Harbor Master is defined as a government official at the port who is appointed by the Minister and has the highest authority to carry out and supervise the fulfillment of the provisions of laws and regulations to ensure the safety and security of shipping.

Based on this understanding, there are elements that are directly related to each other, namely the control of the sea, docks and ships. Facilities and infrastructure must be arranged and organized in such a way that they can support the smoothness, security and safety of sea transportation traffic. Users of sea transportation services who use ships that are not seaworthy can cause losses to the goods being transported and even the loss of the lives of passengers and crew. To avoid this from happening, an inspection is carried out by the Harbor Master in the form of:

The use of sea transportation services using ships that are not seaworthy can cause losses to the goods being transported and even loss of life for passengers and crew. To avoid this from happening, an inspection is carried out by the Harbor Master in the form of:

1. Annual inspection, every 12 months inspected while the ship is in the dock.
2. Major inspections, carried out every 4 years along with annual docking time.
3. Damage inspection or repairs are carried out when damage occurs that affects the perfection of the ship.
4. Additional inspections are carried out if a dispensation is required, for example when transporting passengers, carrying dangerous cargo, etc. Seaworthy conditions must always be maintained, including through maintenance.

The ship's own crew regarding the ship's structure, ship's engine, safety equipment and other aids so that everything is ready to be used whenever needed. Foreign ships that wish to enter Indonesian waters are required to follow the ship inspection procedure in order to be able to continue the previous voyage. Supervision of Foreign Ships (Port State Control) is carried out by the Harbor Master section. The results of the inspection of foreign ships referred to above are divided into seaworthy, substandard, and unsafe. The follow-up or decision from seaworthy is to provide clearance out (permission to leave the port), in substandard conditions it is necessary to clarify with the ship operator, and for unsafe conditions it is necessary tinCorrective Action can even be prevented from sailing. Ships that are declared seaworthy can sail to the destination port. If the ship is declared unsafe or not seaworthy in sailing, it is required to repair every system or equipment of the ship that is declared damaged or not seaworthy in order to carry out the safety and security functions during the voyage. There is a slight difference in the inspection of foreign ships that will dock with ships flying the Indonesian flag.

And foreign ships inspections are carried out in the waters of the additional zone, namely the sea located on the outer side of 12 nautical miles. This means that the additional zone is outside the territorial sea zone of a country. This is also to prevent any threats that occur on the ship as we know recently the emergence of the COVID-19 pandemic. It is necessary to carry out supervision and checks so that a country is not contaminated with the virus. Article 207 (2) of Law Number: 17 of 2008 concerning Shipping explains that a harbor master also takes part in the search or rescue of a sea vehicle if the sea vehicle experiences an accident or disruption while carrying out shipping activities.

3. RESEARCH METHODS

In this research methodology, it is a scientific analytical research method to obtain data with certain goals and uses which is based on data analysis according to (Sugiyono 2019:2).

Yes This research is a causal correlation which is used to test the hypothesis about the existence of a relationship between independent variables and dependent variables whose description is associative, namely research which aims to determine the relationship between two or more variables.

Research variables and operational definitions

Research variables

In this study there are two research variables, namely the independent variable (free variable) and the dependent variable (bound variable).

To The two research variables are:

1. Independent Variable (Free Variable)

Independent variables (free variables) are often referred to as stimuli, predictors, antecedents.

Independent variables are variables that influence or cause changes or the emergence of dependent or bound variables (Sugiyono, 2019:69). The independent variables in this study are:

a. Guidance (X1)

b. KSOP Supervision (X2)

c. Vessel Traffic Service (X3)

2. Dependent Variable (Bound Variable)

MenSugiyono (2019:69) sequence dependent variables or often called output variables, criteria, consequences. In Indonesian it is often referred to as bound variables. The bound variable is a variable that is influenced or that is the result, because of the presence of the independent variable.

The dependent variable in this study is Shipping Safety (Y)

Operational Definition

Operational definition is an explanation or description of research variables in a measurable form. This is intended to provide convenience to respondents in choosing a category or level of assessment that is appropriate according to what the respondent feels.

1. The Managertwo (X1)

The Managerduan (X1) is an activity in assisting the ship's captain, so that navigation can be carried out safely, orderly and smoothly by providing information about the condition of local waters that are important for the safety of the ship and the environment (Decree of the

Minister of Transportation No. 24 KM of 2002). Research indicators for Guidance can be measured by:

Indiathe causative agent of this variable is:

a. Shipping Channel Safety ($X_{1.1}$)

Memprovide the captain with information about local waters that is important for safe navigation.

b. Shipping Safety Measures ($X_{1.2}$)

Memassist the captain or leader of the ship to take appropriate action to ensure safe sailing when the ship enters and exits shipping lanes.

c. Smoothness of Ships Entering and Exiting Shipping Lanes $(X)_{1.3}$)

Karena pilotage is for the benefit of the captain and his ship, so basically ship pilotage services are carried out at the request of the captain.

2. KSOP (X2)

The harbormaster as the highest official in the port certainly has great authority according to Law Number; 17 of 2008 concerning Shipping, so the Harbormaster has the task of supervising the seaworthiness of ships, safety, security and order of the port. Orderly ship traffic in port waters and shipping lanes, activities loading in port waters, pilotage, supervising ship towing activities.

Activitiesn underwater and salvage, loading and unloading of dangerous goods, refueling, dredging and reclamation, port facility construction activities.

Indiathe causative agent of this variable is:

a. Loading and Unloading of Dangerous Goods ($X_{2.1}$)

The port carries out shipping safety and security functions which include carrying out loading and unloading activities for dangerous goods, special goods, hazardous and toxic waste (B3).

b. Ship Traffic Order ($X_{2.2}$)

Ship traffic entering and leaving the port through ship guidance, provision and/or service of port services and granting of concessions or other forms to Port Business Entities.

c. Seaworthiness of the Ship ($X_{3.3}$)

Eligibility Ship condition is the condition of a ship that meets the requirements for ship safety, prevention of waters from the ship, manning, loading lines, loading, welfare of the crew and health of passengers, legal status of the ship, safety management and prevention of pollution from the ship, and security management of the ship to sail in certain waters.

3. *Vessell Traffic Service*(X3)

Vessell Traffic Service (VTS) merprovide a communication system that can provide information and messages to ships, for example it can provide information or data about the positions of other ships passing through traffic lanes, warning message information about navigation and meteorological hazards and regulate ship traffic in a waterway.

*Vessell Traffic Service*can be useful to help the shipping system in preventing the risk of collisions between ships, grounding (running aground), helping smooth ship movement and can meincrease the maximum in operating the ship. The research indicators for the Vessel Traffic Service variable are: a. Preventing Ship Collisions ($X_{3.1}$)

Preventionn collision means an action to prevent collisions between ships so that they can sail to their destination safely. In order for this to be carried out properly, a sense of responsibility and a high work ethic are needed from the officers and the role of the Vessel Traffic Service.

Preventing Ships from Running aground ($X_{3.2}$)

Preventionn ship running aground is an action to prevent the ship from stopping suddenly because it is sitting on the bottom of the water or because of the shallowness of the water.

Providing Information About the Position of Other Ships ($X_{3.3}$)

Sebaas an automatic information provider for ship identity, position, speed, navigation status and everything related to shipping safety.

4. Safetyn Shipping (Y)

Safetyn shipping is everything that exists and can be developed in relation to accident prevention measures when carrying out work in the shipping sector.

In Law No. 17 of 2008 concerning shipping, Article 1 point

33 states that security and safety in shipping is a condition where safety requirements are met for transporting goods in waters, ports, and the maritime environment. The indicators of this study are:

1. Water Safety ($Y_{.1}$)

Aare waters that include regional seas, archipelagic waters, inland waters that are considered safe and navigable.

2. Security of Shipping Lanes ($Y_{.2}$)

AIn terms of depth, width and freedom from other navigational obstacles, it is considered safe and secure to sail on.

3. Smoothness of Ship Traffic ($Y_{.3}$)

Ain peaceful sea traffic of foreign water vehicles in Indonesian inland waters and free from obstacles.

Determination of population and sample

Population

MenAccording to Sugiyono (2019:126), population is a generalization area consisting of objects/subjects that have certain quantities and characteristics determined by researchers to be studied and then conclusions drawn. Population is divided into 2 (two) in terms of number:

1. Pofinite pulsation

What is meant by a finite population is a population whose number is known.

2. Poinfinite pulsation

What is meant by an infinite population is a population whose number is unknown.

In this study using a finite population, the population for the object of this study was taken in the working area of the Batam Harbormaster and Special Port Authority office, namely shipping agents as of March 2023 as many as

200 Ship agents.

Sample

SamThe sample is part of the number and characteristics possessed by the population. So the sample is part of the existing population. (Sugiyono, 2019:127).

MenSugiyono (2019:129) said that to determine the sample to be used, there are various sampling techniques used, such as the following:

1. Probability Sampling

Ais a sampling technique that provides an equal opportunity for each element (member) of the population to be selected as a sample member. The probability sampling techniques are:

a. Simple Random Sampling

Insay simple because the taking of sample members from the population is done randomly without paying attention to the strata in the population.

b. Proportionate Stratified Random Sampling

YouThis technique is used when the population has members/elements that are not homogeneous and proportionally stratified.

c. Disproportionate Stratified Random Sampling

YouThis technique is used to determine the number of samples, if the population is stratified but less proportional.

d. Cluster Sampling (Probability Sampling)

YouArea sampling technique is used to determine the sample when the object to be studied or the data source is very broad, for example the population of a country, province or district. To determine which population will be used as a data source, the sampling is based on the specified population area.

2. Nonprobability Sampling

Ais a sampling technique that does not provide equal opportunity/chance for each element or member of the population to be selected as a sample.

YouNon-probability sampling techniques include:

a. Systematic Sampling

YouSampling technique based on the sequence of population members who have been given sequential numbers.

b. Quota Sampling

Youtechnique for determining samples from a population that has certain characteristics up to the desired number (quota)

c. Incidental Sampling

Yousampling technique based on chance, that is, anyone who coincidentally meets the researcher can be used as a sample, if the person who was met coincidentally is considered suitable as a data source

d. Purposive Sampling

Sampleling Purposive is a sampling technique with certain considerations. This sample is more suitable for qualitative research, or research that does not generalize.

e. Jenuz Sampling

SampleSaturated sample is a sample that, if increased in number, will not increase representation and will not affect the value of the information obtained.

f. Snowball Sampling

Yousampling technique that starts small and then gets bigger.

g. Total Sampling

SampleTotal sampling is a sampling technique where all members of the population are sampled.

In this study using quota sampling, it is said to be quota sampling because it is to determine a sample from a population that has certain characteristics to the desired number (quota). The formula used to determine the sample based on data from the population, namely 200 agents, as follows using the Slovin formula:

Formula: n = N

1+N(e^2) Information:

n : Sample

N : Population

E: Amount of slack made (10%) = 0.1

Soi : n = 200 = 200 = 66.67

1+200(0.1^2) 3

Seeso that the number of samples used in this study is

66.67 respondents or samples were taken and rounded up to the number

67 respondents or samples.

5. RESULTS AND DISCUSSION

Office Batam Harbormaster and Special Port Authority has existed since 1989 under the name of Batam Port Office (Kanpel Batam), initially Batam was still under the Sumbu Island Harbormaster. In 1985, the Class V Sekupang Harbormaster was formed, led by Mr. Djamilin Manurung, overseeing the Sekupang area, while the Class V Batu Ampar Harbormaster was led by Mr. Jansen Natiputulu, overseeing the Batu Ampar and Kabil areas. In 1989, Batam changed its name to the Class II Batam Harbor Office and was headquartered at the South Pier of Batu Ampar Harbor, then in 1996 the Regional Office IV of the Department of Transportation handed over the project results to be used in Operational Tasks (BASTO) in the form of 1 (one) Unit of office building located in Sekupang. Since the establishment of the office building as Head of the Batam Harbor Office under the leadership of Mr. Hendro, Mr. Capt. Sato Bisri, Drs. Jimmy AB. Nikijulu and Mr. Ir. Insan Kamil who has an office in Sekupang. Because the economic development of Batam is very rapid, according to the Decree of the Minister of Transportation Number: 63 of 2002 concerning the Organizational Structure and Work Procedures of the Port Office, the Decree of the Minister

of Transportation explains that the Batam Port Office has been upgraded to a Class 1 Batam Port Office with an Echelon II.b Head of Office.

Dadat that time the Batam Port Office moved to the Pertamina Tongkang Building in Batu Ampar which was contacted by the Batam Authority and then the Batam Authority built a new building during the Leadership of Mr. Ir. Poltak Panjaitan, Drs. Harun Let Let, Ir. Insan Kamil, Capt. Rocky Ahmad who since then until April 2017 the Batam Port Office occupied the building DadIn May 2017, the Batam Port Office under the leadership of Mr. Bambang Gunawan, M. Mar, E. The Batam Port Office moved to the old building located on Jalan RE.Martadinata-Sekupang. In September 2018 amendment to the Regulation of the Minister of Transportation Number: KM 65 of 2010 concerning the Organization and Work Procedures of the Batam Port Office, as amended by the Regulation of the Minister of Transportation Number: PM 93 of 2018 concerning the Organization and Work Procedures of the Batam Harbor Master and Special Port Authority Office. The period of December 2017 saw the change of the Head of the Batam Harbor Master and Special Port Authority Office from Mr. Bambang Gunawan, M. Mar, E to Mr. Capt. Barlet, MM, then in December 2019 the leadership changed from Mr. Capt. Barlet, MM to Mr. Sanggam Marihot, SE, MM, then in November 2020 the leadership changed from Mr. Sanggam Marihot, SE, MM, to Mr. Drs. Hermanto, MM, then Rivolindo, Sh., Mm until now.

Also Batam is located in a very strategic geographical position, because Batam faces the Strait of Malacca which is one of the most congested Straits in the world. Our neighboring countries Singapore and Malaysia have succeeded in utilizing their strategic position which also faces the Strait of Malacca with the rapid development of the ports of Singapore, Tanjung Pelepas and Port Klang Malaysia. The geographical conditions of the Batam Harbormaster and Special Port Authority Office area with a total area of 1,575 km², Water Area of 860 km² and Land Area of 715 km². The working area of the Batam Harbormaster and Special Port Authority Office is directly adjacent to:

North: Strait of Singapore and Singapore

Southn : Lingga Regency

Coalt : Karimun Regency

Teamur : Bintan Island and Tanjung Pinang

Intervalt Malacca has been known since ancient times as a trading route for Europeans to carry out trade expeditions to Asia, we also know about the Tjeng Ho trade mission expedition from China to melatrade with the Majapahit kingdom which ruled the region around Southeast Asia at that time.

Berrelated to the history above, it is a gift for Batam Island which is located in front of the Malacca Strait. So that its strategic position can be utilized to play a role in the globalization of international trade through increasing the flow of ships and goods through the Malacca Strait, this is a strategic challenge for Batam Port to immediately adapt to the needs of change so that Batam Island/Batam Port can become a window for Indonesia's international trade.

Organizational Structure

Sorganizational structure is a systematic structure that shows a fixed pattern and relationship between its functions, as well as people who show positions and can carry out different tasks, authorities and responsibilities in order to achieve a desired goal in an organization. The authority and responsibility of a leader to the lowest level in an organization are distinguished as follows:

1. Line Organization

Mera form of organization in which a leader is recognized as the sole source of authority, and all policy decisions and responsibilities lie with that leader.

2. Line and Staff Organization

It is an organization that is a form of combination between Line Organization and Staff Organization. Thus the characteristics of the order of the organization's tasks are based on the unity of command or orders that always ask for and receive assistance from its staff.

3. Functional Organization

This is a form of organization where the leader gives instructions to expert staff who are fully responsible for their fields.

AIf we observe the organizational structure of the Batam Harbor Master and Port Authority Office, this is a form and staff consisting of leaders assisted by staff and there is a unity of command and has a chain of command from the top to the bottom and the staff here has functional authority.

Based on Government Regulation 93 of 2018, the Batam Harbor Master and Special Port Authority Office, referred to as the Batam Special KSOP, is a Technical Implementation Unit within the Ministry of Transportation which is under and responsible to the Director General of Sea Transportation, and the Batam Special KSOP Office has the task of carrying out supervision and law enforcement in the field of shipping safety and security, coordinating government activities at ports and regulating, fostering, controlling and supervising port activities at ports that are commercially operated in the Batam Free Trade and Free Port Zone and the work areas under its authority.

6. CONCLUSION AND SUGGESTIONS

BerBased on the results of the research and data processing obtained from distributing questionnaires to 100 respondents and from the results of data analysis in Chapter IV, the researcher can conclude the following. Multiple linear regression equation:

Y = 1.052 + 0.357 X1 + 0.272 X2 + 0.220 X3 + μ

1. Based on statistical testing with multiple linear regression equations, it is obtained that Guidance (X1) is 0.357, meaning that if other independent variables are considered constant and Guidance decreases by 1 unit, then the shipping safety variable (Y) will also decrease by 0.357. Partially, Guidance (X1) has a positive and significant effect on shipping safety (Y). This is evidenced by the calculated t value (4.335) > t table (1.99834) with a significant level (0.05). This is related to the safety of shipping lanes in the form of pilot activities in helping to provide information advice to the captain about local waters that are important so that shipping navigation can be carried out safely, shipping safety measures in the form of activities to pick up and drop off people who violate immigration regulations as well as illegal activities by unloading or loading goods that violate customs regulations, and the smoothness of ships entering and leaving shipping lanes in the form of efforts to maintain the safety of ships, passengers and their cargo when entering shipping lanes. So it can be concluded from this study that the safety of shipping lanes, shipping safety measures and the smooth flow of ships entering and

leaving shipping lanes have not been carried out properly and periodically, resulting in a decline in shipping safety.

2. Based on statistical testing with multiple linear regression equations, it was found that KSOP supervision (X2) was 0.272, meaning if other independent variables are considered constant and KSOP supervision is increased by 1 unit, then the shipping safety variable (Y) will increase by 0.272. Partially, KSOP supervision (X2) has a positive and significant effect on shipping safety (Y). This is evidenced by the calculated t value (4.092) > t table (1.99834) with a significant level (0.05). This is related to the loading and unloading of dangerous goods which is a concern for KSOP officers in the field so that shipping safety and security can be realized, orderly traffic in the form of ship guidance, provision and/or port service services and granting concessions or other forms, and ship seaworthiness carried out by officers in the form of ship conditions that meet ship safety requirements from the legal status of the ship. This is if the loading and unloading of dangerous goods, orderly traffic and ship seaworthiness are carried out properly and periodically, there will be an increase in shipping safety. So it can be concluded that the hypothesis stating that KSOP supervision has a positive and significant effect on shipping safety at the Batam Special KSOP office has been proven to be true.

3. Based on statistical testing with multiple linear regression equations, it was obtained that Vessel Traffic Service (X3) was 0.220, meaning that if other independent variables were considered constant and Vessel Traffic Service was increased by 1 unit, then the shipping safety variable (Y) would increase by 0.220. Partially, KSOP supervision (X3) had a positive and significant effect on shipping safety (Y). This is evidenced by the calculated t value (2.791) > t table (1.99834) with a significant level (0.05). This shows that Vessel Traffic Service which can prevent ship collisions, prevent ships from running aground and provide information about the position of other ships has an effect on shipping safety. This is because if it prevents ship collisions, prevents ships from running aground and provides informationi about the position of other ships is done properly and periodically, there will be an increase in shipping safety. So it can be concluded that the hypothesis stating that the Vessel Traffic Service has a positive and significant effect on shipping safety at the Batam Special KSOP office has been proven true.

Suggestions

Based on the conclusions that have been made, the suggestions that can be given in this research are:

1. Guidance plays an important role in navigation safety. Suggestions related to guidance are that the Batam Special KSOP office is expected to continue to improve the smoothness of ships related to guidance at the Batam Special KSOP office so that the safety of shipping lanes, navigation safety measures and the smoothness of ships entering and leaving shipping lanes are more controlled and can improve navigation safety.

2. KSOP supervision has an important role in shipping safety. Suggestions related to KSOP supervision at the Batam Special KSOP office are to continue to supervise the loading and unloading of dangerous goods, orderly traffic and seaworthiness of ships so as not to be negligent in carrying out their duties and responsibilities as the highest official at the port so that nothing happens that could endanger shipping safety at the Batam Special KSOP.

3. It is expected that the Navigation District as a Government Agency under the auspices of the Ministry of Transportation can improve the Vessel Traffic Service system and the quality of its human resources so that there is no miscommunication between the VTS Operator and the Ship Crew using VTS services in this case at the special KSOP office in Batam.

4. Due to limitations in this writing, the author realizes that there are still many limitations and shortcomings, including the fact that the research only took 3 independent variables, namely guidance and supervision of KSO. Vessel Traffic Service. So that researchers focus on the three variables only, and the object studied is only one, namely shipping safety. Further research is expected to be able to thoroughly examine and can add other independent variables that affect shipping safety factors. Because it will be better if many variables are studied, it will also have a good effect on the agency and further research.

REFERENCE

Faturachman, D., Muslim, M., & Sudrajad, A. (2015). Analisis keselamatan transportasi penyeberangan laut dan antisipasi terhadap kecelakaan kapal di Merak-Bakauheni. Jurnal Teknik Mesin Untirta, 1(1), April 2015.

Febriana, E. (2021). Analisis penggunaan layanan vessel traffic system terhadap keselamatan pelayaran di alur pelayaran barat Surabaya Pelindo 3. Volume 21(2), Universitas Hang Tuah.

Ghozali, I. (2018). Aplikasi analisis multivariate dengan program SPSS (Vol. 316). Universitas Diponegoro.

Purnama Sari, J. (2014). Pengawasan syahbandar dalam upaya mewujudkan keselamatan, keamanan, dan ketertiban penumpang di Pelabuhan Tembilahan. Bibliografi: 8 jurnal, 22 buku, 23 situs internet, 1(2).

Samekto, A. A., & Soejanto. (2014). Meningkatkan kinerja perusahaan ekspedisi muatan kapal laut melalui diversifikasi usaha. Jurnal Manajemen Transportasi & Logistik, 1(1), Sekolah Tinggi Maritim dan Transpor (STIMART) - AMNI Semarang.

Santosa, A., & Sinaga, E. A. (2019). Peran tanggung jawab nakhoda dan syahbandar terhadap keselamatan pelayaran melalui pemanfaatan sarana bantu navigasi di Pelabuhan Tanjung Emas Semarang. Jurnal Saintek Maritim, 20(1), STIMART “AMNI” Semarang.

Sari, I. C., Suwandi, R., Satria, A., & Soeboer, D. A. (2016). Port, shipping and logistic management. Jurnal Teknologi Perikanan dan Kelautan, 7(2), 191-199.

Suryani, D., Pratiwi, A. Y., Sunarji, & Hendrawan, A. (2018). Peran syahbandar dalam keselamatan pelayaran. Jurnal Saintara, 2(2), Maret 2018.

Thamrin, H. M. (2015). Manajemen keselamatan maritim dan upaya penanganan keselamatan kapal ke titik zero nol (zero accident). Jurnal Ilmiah Widya, 110-116. Departemen Perhubungan Republik Indonesia.