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Shipping Navigation Service Policy Model in Supporting National Economy

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Abstract: Shipping safety is very important because ignoring it can result in ship accidents that have an impact on fatalities, environmental damage, and economic activities. Furthermore, ship accidents threaten maritime growth and investment in the shipping sector, besides that sea accidents have a negative impact on humans, the marine environment, property, and activities on board and on land. The impacts caused by accidents vary, ranging from minor injuries to death, from minor damage to very severe damage to the environment and property. This cannot be separated from the navigation functions to determine the position and/or course of the ship, notify of dangers/obstacles to shipping, indicate the boundaries of safe shipping lanes, mark the dividing lines of ship traffic, indicate areas and/or special activities in the waters and also the boundaries of a country. This study aims to determine and analyze: (i). Relationship between Standard and Policy Targets, Resources, Inter-Organizational Communication of Implementers and Strengthening Activities, Socio-Economic and Political Conditions, Characteristics of Existing Implementing Organizations, and Implementer Attitudes towards Shipping Navigation Service Policy; (ii). Shipping Navigation Service Policy Model that supports the National Economy reviewed based on suggestions and input from stakeholders/experts; and (iii). Impact of Shipping Navigation Service Policy in Indonesia in supporting the national economy.

The approach used in this study is a mixed method consisting of quantitative and qualitative approaches. For this study, the research location was 25 Type A and B Navigation District Offices. The 310 respondents were representatives of regulators, port operators, service providers, and entrepreneurs involved in shipping safety.

The conclusion of this study shows that: (i). There is a positive relationship between the variables of Standards and Policy Targets, Resources, Inter-Organizational Communication of Implementers and Strengthening Activities, Socio-Economic and Political Conditions, Characteristics of the Existing Implementing Organization and the Attitude of the Implementer with the Shipping Navigation Service Policy; (ii). The Shipping Navigation Service Policy Model has a positive influence on the national economy. If the policy model increases by 1%, it will boost the National Economy by 0.71%.; (iii). The Shipping Navigation Service Policy will provide safety assurance to ships sailing, provide maritime protection so as to prevent accidents and oil spills that are detrimental, thus encouraging maritime trade activities and port activities through export-import activities that have an impact on the national economy; and (iv). Informants suggested the need for regulation of equipment reliability and use of technology and digitalization, HR Competence, regulation/Legality, stricter law enforcement for violators of shipping navigation rules, organizations that have financial/budget independence, the existence of mature and detailed equipment Procurement/maintenance Planning, welfare and rewards, government relations and support, coordination between stakeholders, increasing the role of supervision by KSOP, and involving the maritime community in socialization and implementation.

The recommendations of this study are: (i). There needs to be a policy related to the organization implementing Shipping Navigation Services that can improve service performance by being able

to manage budget efficiency, not being dependent on the APBN, and having the independence to procure and operate Shipping Navigation Service equipment by optimizing revenue; and (ii). The implementation of the Shipping Navigation Services Policy is greatly influenced by Compliance in carrying out supervision and enforcement of implementation in the field. On the other hand the function of compliance with the implementer the regulations are implemented by the Harbor Master and Port Authority Office. So it is necessary to regulate the supervision and enforcement functions by mitigating the risk of ineffectiveness and inefficiency because on the other hand, the Navigation District office has the authority to develop but compliance supervision is carried out by other work units.

Keywords: Navigation Services, Economy, Shipping Safety, Business Unit

Background of the Problem

Maritime safety is very important because ignoring it can result in ship accidents that have an impact on loss of life, environmental damage, and economic activities. Nwokoro & Nwokedi (2015) explained that ship accidents threaten maritime growth and investment in the shipping sector. In addition, sea accidents have a negative impact on humans, the marine environment, property, and activities on board and on land in various forms, and levels of extent. The impacts caused by accidents vary, from minor injuries to death, from minor damage to very severe damage to the environment and property, and increased transportation costs (Mullai & Paulsson, 2011 and Akten, 2006).

Indonesia is strategically located on world trade routes. Around 90% of international trade is via sea routes with 40% of these sea routes using Indonesian waters. In addition, Indonesia has the Malacca Strait which is the third busiest strait in the world, passed by ships carrying ±40% of the world's traded goods, and is the main route for ±80% of oil and LNG carriers from the Middle East to China, Japan, Korea, and parts of America. This strategic geographical location and the crossroads of international trade routes will make Indonesia become the World Maritime Axis.

Government Regulation Number 5 of 2010 concerning Navigation, explains that navigation is carried out to ensure the security and safety of shipping, encourage smooth economic activities, mark territorial boundaries in order to maintain sovereignty, strengthen state defense and security, and strengthen national unity within the framework of the archipelago outlook. This cannot be separated from the functions of navigation to determine the position and/or course of the ship, notify of dangers/obstacles to shipping, indicate the boundaries of safe shipping lanes, mark the dividing lines of ship traffic, indicate areas and/or special activities in the waters and also the boundaries of a country. Navigation activities' other functions are very strategic from a political, economic, and security defense strengthening perspective. In addition to marking the boundaries of the sovereign territory of the state within the framework of the Unitary State of the Republic of Indonesia (NKRI) and strengthening defense and security, it also functions to encourage the acceleration of economic growth. Therefore, the arrangement of shipping lanes (routing of ships) and the provision of navigation aids, marine telecommunications, and vessel traffic services (VTS) are very important in realizing shipping safety.

The Navigation District Offices that carry out navigation services in Indonesia until 2023 total 25 locations consisting of 10 Type A Class I Navigation Districts, 7 Type A Class II Navigation Districts, 7 Type A Class III Navigation Districts, and 1 Type B Navigation District. This all-Navigation District Offices (except Type B) carry out navigation services and supervision of some navigation activities. Type B (in accordance with the Decree of the Minister of Finance Number KMK 73/KMK.05/2023) has been designated as the Navigation District Public Service Agency, only carrying out navigation services without supervisory duties and functions. An overview of the assets, income, and budget managed by the Navigation District Office is reflected in the Ministry of Transportation's Navigation District Financial Report as can be seen in Table 1 below.

Table 1. Total Assets, Income, and Expenditure at the Navigation District Office in 2020

No	Job Unit	Total Asset (IDR)	Total PNBP (IDR)	Expenditure (IDR)	ROA	BC Ratio
Navigation District Class 1						
1	Ambon	377.505.996.016	414.739.033	70.397.865.000	0.110	0.589
2	Belawan	319.114.183.463	819.876.026	46.979.817.000	0.257	1.745
3	Dumai	697.340.436.726	1.891.219.815	44.648.070.000	0.271	4.236
4	Manado/Bitung	440.463.383.744	762.981.501	53.065.964.000	0.173	1.438
5	Palembang	426.425.544.177	5.432.740.939	66.906.618.000	1.274	8.120
6	Samarinda	355.393.151.016	3.247.063.100	61.688.220.000	0.914	5.264
7	Sorong	306.754.718.923	756.502.536	40.224.882.000	0.247	1.881
8	Surabaya	863.983.144.224	3.587.448.940	83.805.228.000	0.415	4.281
9	Tanjung Pinang	333.853.342.476	8.768.753.287	63.158.125.000	2.627	13.884
10	Tanjung Priok	658.192.705.166	7.312.858.960	97.169.587.000	1.111	7.526
11	Ujung Pandang	567.660.616.928	895.664.082	75.116.662.000	0.158	1.192
Navigation District Class 1I						
1	Banjarmasin	561.377.475.923	4.122.980.090	39.182.779.000	0.734	10.522
2	Benoa	732.357.569.654	1.606.202.595	55.174.574.000	0.219	2.911
3	Jayapura	258.898.473.876	17.716.902	34.047.365.000	0.007	0.052
4	Kupang	409.406.486.439	220.304.349	66.871.271.000	0.054	0.329
5	Sabang	212.623.920.768	49.698.701	37.327.194.000	0.023	0.133
6	Semarang	242.713.726.664	759.774.852	57.052.596.000	0.313	1.332
7	Teluk Bayur	337.932.631.512	376.131.324	53.539.790.000	0.111	0.703
Navigation District Class 1II						
1	Cilacap	165.057.805.458	107.360.818	38.967.588.000	0.065	0.276
2	Kendari	214.310.521.539	482.125.886	53.366.411.000	0.225	0.903
3	Merauke	237.142.223.679	13.105.960	30.278.344.000	0.006	0.043
4	Pontianak	405.118.139.799	675.618.142	43.282.507.000	0.167	1.561
5	Sibolga	228.528.913.934	158.259.566	36.160.346.000	0.069	0.438
6	Tarakan	317.305.509.884	1.044.236.865	55.432.211.000	0.329	1.884
7	Tual	767.405.655.559	106.613.859	31.856.682.000	0.014	0.335

Description: ROA (Return on Assets); BC Ratio (Benefit Cost Ratio)
Source: Financial Report of the Directorate General of Sea Transportation 2020 (Audited)

Table 1 shows that the high asset value is not balanced with comparable income. Fixed Asset Turnover (Return on Asset/ROA) is only around 0% - 2.6%, far from the minimum figure of 25% (good fixed asset turnover standard). Meanwhile, the highest benefit-cost ratio (BCR) is only in the Tanjung Pinang Class Disnav, which is 13.88%, meaning it is still very far from the figure of 75% for the criteria of a healthy business entity (Regulation of the Director General of Treasury Number 21/PB/2015). This imbalance will cause a very large dependence on the National Budget (APBN) and the potential for idle or unused assets. Utilization of assets in the Navigation District is still not optimal. At least ROA measures the effectiveness of management in generating income/profit with available assets. Shipping Navigation Services have an impact on shipping safety which benefits maritime trade and Economic Growth. Ship accidents have significant economic impacts such as damage to ships and their cargo, loss of life of crew and passengers, financial losses for parties involved in ship operations, and externalities for third parties affected by the accident. Pery et al (2021) study concluded that human error in maritime transportation is related to maritime transportation safety and has an impact on the environment and ecology as well as the economy of the community.

According to UNCTAD (2020), an estimated 98,140 commercial ships measuring more than 100 gross tons serve international shipping, dominated by gas carriers, oil tankers, bulk carriers and container ships and grew rapidly throughout 2020. These ships have a significant impact on maritime trade and the world economy because they are the main ships for trading activities. Another study stated that despite advances in technology, processes, procedures, training, and regulations, a total of 193 ships exceeding 100 gross tons were lost in the three years since

2017, mainly due to ship sinking (62%), grounding (15%), fire/explosion (10%), engine damage/failure (6%) (SSR, 2021). Besides that, Ejezie (2017) concluded that the country's economic progress is hampered by maritime accidents that cause various oil spill problems that are considered detrimental to human health, the environment, costs and indirect costs related to maritime accidents that can also have a major impact on companies and the country.

The development of a business unit (BLU) in District Navigation is a new policy for shipping navigation services that is expected to reduce dependence on the APBN and can encourage national economic growth. However, this policy is not as easy as issuing new regulations but requires the role of all parties to determine the appropriate policy model. GCPSE (2015) explains that to carry out public sector reform in developing countries in relation to the approach to public administration and management, several inputs need to be considered, namely: (i). Public sector reform efforts must be sensitive to context and use a variety of approaches. No single public management model offers a magic bullet to address deep-seated public administration problems; (ii). Only countries that have established basic organizational requirements for public administration can experiment with New Public Management (NPM) reforms to increase internal competition and accountability of service providers; (iii). A heterodox approach that selectively refers to a series of traditional public management will be more appropriate for many developing countries than a reform approach based on models that have developed in the political and economic conditions of advanced industrial countries.

Several studies related to the relationship between BLU, NPM, and economic development in several countries include Sarker (2006), Wood (2001), Ibrahim (2016), Kumar (2016), Haliah (2021), and Putri (2020). The success of a public policy is highly dependent on how it is implemented because the policy program that has been taken as an alternative solution to the problem must be implemented. Several current shipping navigation service policies are regulated. The Public Service Agency Financial Management Pattern are currently being implemented so that it is necessary to evaluate the implementation of the policy based on expert input suggestions which will ultimately produce an ideal policy model. Grindle (in Wahab & Solichin, 2004) also views that policy implementation is not merely related to the mechanism of explaining political decisions into routine procedures through bureaucratic channels, but more than that, it concerns issues of conflict, decisions and who gets what from a policy. According to Meter & Horn (in Subarsono, 2015), there are six variables that affect implementation performance, namely: (i). Policy Standards and Targets; (ii). Resources, 3) Inter-organizational Relations, 4) Characteristics of the Implementing Organization, 5) Social, Political and Economic Conditions, and 6) Implementer Attitudes.

Implements the Financial Management Pattern of Public Service Agencies, in general, shipping navigation services are divided into two types, namely the provision of shipping navigation services and their supervision, and the provision of services independently with the flexibility of managing their own budget for Type B Navigation Districts. From the description above, it can be concluded that there is a gap in public service activities that are very complex with the support of large asset values. The Navigation District needs to optimize income from the existence of assets and human resources, dependence on the APBN causes services to service users to be greatly affected if the source of APBN funds decreases and the role of the Navigation District in economic growth through asset management and financial efficiency. The Type A Navigation District Office which provides shipping navigation services and supervision needs to be regulated properly so that the safety function is not reduced and the effectiveness and efficiency in budget and asset management are maintained.

Based on the gap above, specifically, the purpose of this study was to determine and analyze: (i). The relationship between the variables of Standards and Policy Targets, Resources, Inter-Organizational Communication of Implementers and Strengthening Activities, Socio-Economic and Political Conditions, Characteristics of Existing Implementing Organizations and Implementer Attitudes towards Shipping Navigation Service Policy; (ii). Shipping Navigation Service Policy Model that supports the National Economy is reviewed from the aspects of Standards and Policy Targets, Resources, Inter-Organizational Communication of Implementers and Strengthening Activities, Socio-Economic and Political Conditions, Characteristics of Existing Implementing Organizations and Implementer Attitudes based on suggestions and input from stakeholders/experts; (iii). The Impact of Shipping Navigation Service Policy in Indonesia in supporting the national economy; and (iv). Shipping Navigation Service Policy Model in Indonesia in supporting the national economy according to input from stakeholders/experts.

Theoretical Background

Shipping Safety and National Economy

The maritime industry and maritime trade play an important role in the economic development of many countries, especially countries with a strong export economy. Countries that depend on water transportation require maritime transportation for passengers and cargo, and are important for connecting remote and isolated communities with the rest of the world. The maritime industry and maritime trade create jobs, stimulate economic growth, and increase the wealth of a multiplier country and have a major impact on the global economy. Shipping accidents are identical to shipping safety failures are unexpected events that result in financial and property losses, damage, or loss of life. Several reasons such as human error, technical failure, natural conditions, shipping factors, route conditions and cargo-related factors play a role in this accident.

An accident to shipping has a very broad impact on human life, the marine environment and the shipping industry. One incident that disrupts ship safety even on a small scale can have a very bad and long-term impact on the marine ecosystem, the environment, and the local economy (Roberts, et al. 2002). Several other studies also explain how the failure of shipping safety has a negative impact on the economy (see among others: Mullai & Paulsson, 2011; Cey (2014); Hetherington et al., 2006; Pedersen, 2010; and Ozbas, 2013). Pedersen (2010) reviewed the analysis procedures for ship and grounding collisions, focusing on the method of probability of accident occurrence, as well as structural damage for accident scenarios. Li, et al (2012) presented an overview of quantitative shipping risk assessment models concluding that more focus is needed on quantifying human error, and proposed Bayesian simulation as a method for propagating model uncertainty. Ozbas (2013), used literature methods and provided a high-level overview of qualitative and quantitative approaches to water transportation risk analysis. Accident prevention is an important option in maritime safety management. One way to achieve this is to assess risks in the waters through surveys or other risk assessment activities and develop preventive measures that improve the safety of shipping navigation. According to the SOLAS Convention, Regulation V/13, governments have an obligation to provide navigational aids in waters, and vessel traffic services (Vessel Traffic System), according to the volume of traffic or the level of risk justified (IALA, 2016). Therefore, methods and tools for assessing and managing maritime waterway risks have been developed, and guidelines for the use of specific tools have been adopted at the international level (IMO, 2010).

Maritime Transportation and National Economy

People's lives in the economic system would be different without maritime trade activities because maritime transportation activities encourage export-import activities and maritime trade activities that provide more lively activities. The role of maritime transportation is very large for the world economy because around 80% of world trade is carried out through maritime transportation so in addition to influencing economic growth and development, maritime transportation has a major influence on sustainable development because it is considered an environmentally friendly mode of transportation and influences economic development (Psaraftis, 2021). Maritime transportation and maritime activities have a major multiplier effect on the world economy, driving many sectors to move, influencing many industries, both directly and indirectly, becoming the backbone of global trade because various resources are transported to manufacturing centers (Bai, et al, 2021), so it is very appropriate now that the world is starting to develop a Blue Economy because maritime transportation is so important for the global economy.

Although maritime transportation activities are very vulnerable and do endanger the environment, their impact is smaller than other types of transportation. Akbulaev & Bayramli (2020), studied the relationship between maritime transport development and economic growth dynamics in several countries in the Caspian Sea (Russia, Azerbaijan, Turkmenistan, Kazakhstan, and Iran) and concluded that better-managed maritime transport promotes sustainable economic development. Park & Seo (2016) examined the economic impact of seaports on regions in Korea using the Augmented Solow Model, concluding that container port activities positively impact regional economic growth, while investment in ports indirectly impacts national economic growth. Gherghina, et. al (2018) evaluated the impact of maritime transport infrastructure on economic growth using panel data regression with fixed effects for EU countries from 1990 to 2016, concluding a positive relationship between maritime transport, related investment, and economic growth, and a negative relationship between air pollutants and economic growth.

Furthermore, Mundronja, et al (2020) concluded that ports have a significant impact on the economic growth of the EU port region, but other factors affecting regional economic growth such as investment and development and human resources need to be considered. Niavis, et al (2017) estimated the importance of maritime

transport for the economy, society, and countries in the Adriatic-Ionian region because maritime transport is the second most important factor of change in the Adriatic-Ionian region. Lane & Pretes (2020) also found that there is a relationship between the National Economy through GDP per capita and Maritime transport represented by the variables of the ratio of trade in goods and port activities, Shipping connectivity index by ship, Coastal ratio and the area and length of the coastline, Between economic growth and land, air, and sea transportation.

Maritime transport has the greatest impact on economic growth compared to land and air transportation (see among others: Park, et al., 2019; Antonellin, 2021; Osadume et al., 2020; Prandeka & Zarkos, 2014; Saeed et al., 2021; Dwarakish, et al., 2015; Lloyd et al., 2019; Liang & Zhao, 2009; and Navarro et al., 2010). Park, et al (2019), in OECD Countries, explain that disruption of maritime market activities due to accidents or wars will greatly affect the world economy. Therefore, transportation prices, political policies, and economic shocks in the world can change maritime transport (see also Antonellin, 2021). Osadume et al. (2020) also found a strong two-way relationship between maritime transportation and economic development. Prandeka & Zarkos (2014) concluded that maritime transportation and tourism are determined as the most important economic resources in the country. In addition, it also plays a major role in the country's recovery from the economic crisis. The study by Saeed et al. (2021) found a relationship between maritime exports and GDP, and no relationship was found between maritime imports and GDP. In addition, Dwarakish et al. (2015) found that maritime transportation affects the GDP ratio positively and effectively. In Nigeria, Lloyd et al. (2019) studied the impact of maritime transportation on the economy. Due to the lack of necessary technological investment and poor management of ports and resources, the impact of sea lanes on the Nigerian economy is considered weak. In China, Liang and Zhao (2009) found that the development of maritime transportation depends on development of GDP ratio and industrial production and employment and in Spain, Navarro et al. (2010) found a relationship between maritime transport and foreign trade in Spain and determined that maritime transport would be strengthened with a new database proposed for foreign trade. It is clearly illustrated how maritime trade is becoming increasingly important for the sustainability of the economic system with transportation costs greatly affecting a country's ability to participate in trade.

Research Method

The method used in this study is a mixed method consisting of qualitative and quantitative approaches (see also: Boyatzis, 1998 and Rothwell, 2010). According to Sujarweni (2014), quantitative research is a type of research that produces findings that can be achieved using statistical procedures. Meanwhile, according to Sugiyono (2017), the quantitative method is a research method based on the philosophy of positivism, used to research certain populations or samples, data collection using research instruments, and data analysis is statistical, with the aim of testing the established hypothesis. While in the qualitative method, the researcher conducted the questionnaire with 310 respondents. Respondents come from several representatives of regulators, port operators, service providers, and entrepreneurs involved in shipping safety. For this study, the research location was 25 Type A and B Navigation District Offices.

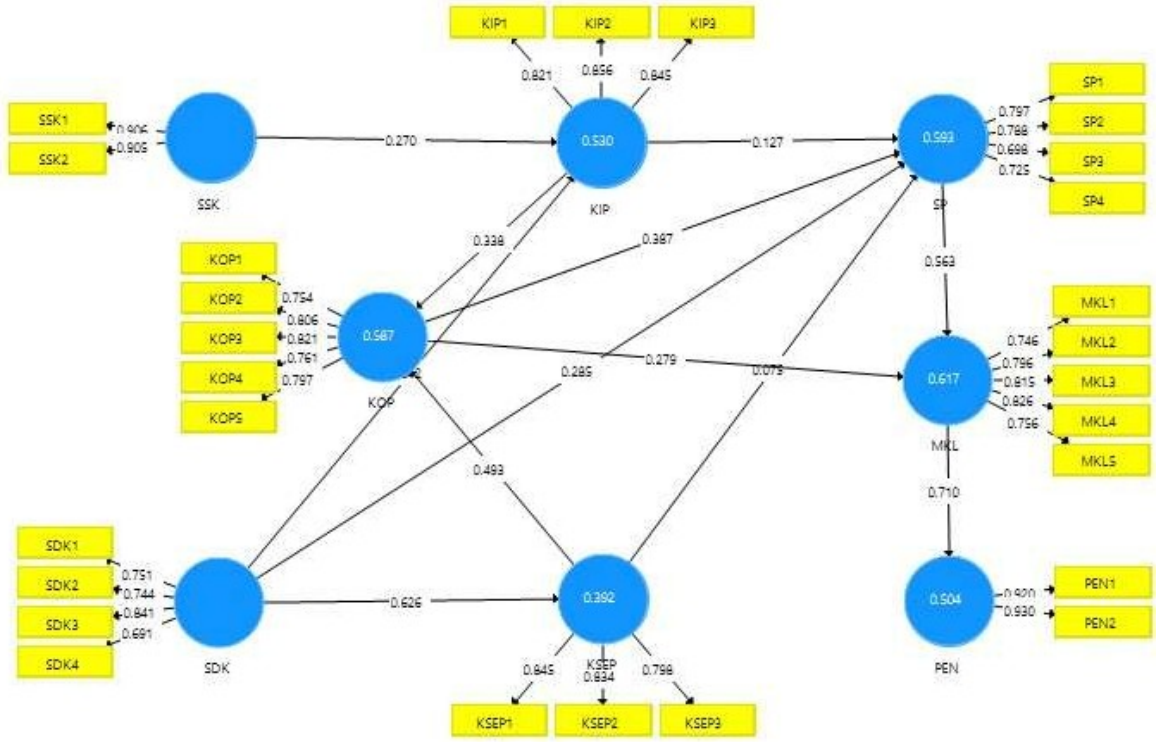
Analysis Of Results and Discussion

Data Quality and Hypothesis Test

Before running the data, a data quality test was first carried out which included a validity test and a reliability test. The Validity Test is used to measure the validity or otherwise of a questionnaire (Ghozali, 2005 & Sekaran et al., 2013). Validity testing is carried out with Construct Validity and Content Validity. Construct Validity is related to the understanding of the theoretical arguments underlying the measurements obtained and shows how well the results obtained from using a measurement are in accordance with the theory. Construct Validity testing is carried out using Confirmatory Model Analysis (CFA) with Convergent Validity criteria (Hair et al. 2013). Furthermore, the reliability testing method uses Cronbach's Alpha with a minimum value of 0.60 (Sekaran, 2013) which is processed using SPSS software. The basis for making decisions on reliability testing is as follows: If Cronbach's Alpha ≥ 0.60 then the statements in the questionnaire are suitable for use (reliable). If Cronbach's Alpha ≤ 0.60 then the statement in the questionnaire is not suitable for use (not reliable). Based on the results of processing the CR value generated from all variables is very high, which is above 0.80. This means that the reliability between all latent variables is very good.

Furthermore, a hypothesis test is carried out as the purpose of the research being carried out. The results of this test are based on the processing of research data using Partial Least Square (PLS) analysis. The path diagram of the output results of the hypothesis test based on PLS analysis using SmartPLS software version 3.0 is presented in the figure below.

Figure 1. Path Diagram of Hypothesis Testing Output Results



Source: Data Processed

Table 3. Direct Effect Hypothesis Testing

	Theory	Original Sample	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	Pvalues(1 Tail)	Decision
H_1:	+	0.338	0.065	5.238	0.000	Positive Significant***
H_2:	+	0.127	0.074	1.715	0.021	Positive Significant**
H_3:	+	0.279	0.058	4.851	0.000	Positive Significant***
H_4:	+	0.387	0.076	5.104	0.000	Positive Significant***
H_5:	+	0.493	0.063	7.775	0.000	Positive Significant***

H_6:	+	0.075	0.073	1.024	0.076	Positive Significant*
H_7:	+	0.710	0.033	21.602	0.000	Positive Significant***
H_8:	+	0.542	0.049	11.160	0.000	Positive Significant***
H_9:	+	0.626	0.037	17.070	0.000	Positive Significant***
H_{10}:	+	0.285	0.076	3.726	0.000	Positive Significant***
H_{11}:	+	0.563	0.051	11.058	0.000	Positive Significant***
H_{12}:	+	0.270	0.054	5.010	0.000	Positive Significant***

Note: Hypothesis Test Results with regression using SmartPLS 3.0
Description: Significant Level ***1%; **5% and *10%

Based on the above result, all hypothesis is accepted. H_1 (Interorganizational Communication of Implementation and Reinforcement Activities has a positive and significant effect on the Characteristics of the Implementing Organization with a coefficient value is 0.338. H_2 (There is a positive and significant effect of Interorganizational Communication of Implementation and Reinforcement Activities on Implementer Attitudes, with a coefficient value is 0.127. H_3 (There is a positive and significant effect of Implementing Organization Characteristics on the Shipping Navigation Service Policy Model, with a coefficient value is 0.127. H_4 (there is a positive and significant effect of the Characteristics of the Implementing Organization on the Implementer's Attitude, with the coefficient value is 0.387. H_5 (there is a positive and significant effect of Socio-Economic and Political Conditions on the Characteristics of the Implementing Organization, with a coefficient value is 0.493. H_6 (there is a positive and significance effect of Socio-Economic and Political Conditions on the Attitude of the Implementer, with the coefficient value is 0.075. H_7 (there is a positive and significant effect of the Shipping Navigation Service Policy Model on the National Economy, with a coefficient value is 0.710. H_8 (there is a positive and significant effect of Policy Resources on Interorganizational Communication of Implementation and Reinforcement Activities, with the coefficient value is 0.542. H_9 (there is a positive and significant effect of Policy Resources on Socio-Economic and Political Conditions, with a coefficient value is 0.626. H_{10} (there is a positive and significance effect of Policy Resources on Implementer Attitudes, with the coefficient value is 0.285. H_{11} (there is a positive and significant effect of Implementer Attitudes on the Shipping Navigation Service Policy Model, with a coefficient value is 0.563. H_{12} (there is a positive and significant effect of Policy Standards and Targets on Interorganizational Communication of Implementation and Reinforcement Activities, with the coefficient value is 0.270.

For more analysis, compare then others, only Interorganizational Communication of Implementation and Reinforcement Activities (H_2) and Socio-Economic and Political Conditions (H_6) has a weaker effect on the Attitude of the Implementer.

4.2. Concept of Shipping Navigation Service Analysis

Based on the results of the questionnaire related to suggestions and input from 310 respondents involved in navigation service activities in Indonesia, the following inputs were obtained.

Table 4. Concept of Shipping Navigation Service Policy Model

No	Statement	Reference	%
1	Reliability of equipment, technology and digital	49	27.07%
2	HR Competence/Competence	28	15.47%
3	Safety. Maritime Protection and Economy	21	11.60%
4	Regulation/Legality	12	6.63%
5	Stricter law enforcement against violators of shipping navigation rules	11	6.08%
6	Service Improvement	11	6.08%
7	Strengthening and Budget Sources	10	5.52%
8	Navigation service policies should be quickly socialized and implemented	9	4.97%
9	Organizational governance	7	3.87%
10	Mature and detailed equipment procurement/maintenance planning	6	3.31%
11	Coordination of all parties	6	3.31%
12	Welfare and rewards	4	2.21%
13	Government Support	4	2.21%
14	Enhancing the Function of KSOP	3	1.66%

Source: Data processed

Based on Table 4., respondents who are actors in shipping navigation services in Indonesia provide suggestions related to the Policy Model for shipping navigation services in Indonesia as follows: (i). As many as 27% of recommendations suggest that increasing reliability, and increasing technology, especially digital, be a priority in the Policy Model for shipping navigation services in Indonesia; (ii). HR competence is the second alternative, namely 15.47% focusing on increasing the ability and competence of Navigation HR in developing the Policy Model for shipping navigation services in Indonesia; (iii). In developing the Policy Model for shipping navigation services in Indonesia, 11.60% suggest focusing on increasing safety, maritime protection, and the economy; (iv). There needs to be a concentration on revising the Regulations and legal aspects related to minimum equipment requirements, HR competence, and sanctions for improving shipping navigation services. This was conveyed by 6.63% in developing the Policy Model for shipping navigation services in Indonesia; (v). As many as 6.08% said that no matter how good all the policy models are, they cannot be implemented if the law enforcement aspects related to the implementation of shipping navigation services are weak/not firm. This was conveyed due to the unclear function of supervision of navigation service compliance; (vi). As many as 6.08% suggested that in the development of the Policy Model for shipping navigation services in Indonesia, the focus should be on Improving Services from all aspects; (vii). The Policy Model for shipping navigation services in Indonesia must be able to regulate budget independence, as many as 5.52% stated that service problems lie in budget sources; and (viii). The rest (under 5%) suggested that in the development of the Policy Model for shipping navigation services in Indonesia, it must always be socialized and can be implemented, pay attention to aspects of mature and detailed planning and coordination with all parties, be paid to aspects of welfare and rewards for implementers and full support from the government. and increasing the duties and functions of KSOP to improve supervision and enforcement of regulations.

Discussion of Analysis Results

1. Based on the results of statistical tests from questionnaires distributed to 310 active respondents in the field of shipping navigation services in Indonesia and based on the results of hypothesis tests, it is known that there is a positive relationship between the variables of Standards and Policy Targets, Resources, Inter-Organizational Communication of Implementers and Strengthening Activities, Socio-Economic and Political Conditions, Characteristics of Existing Implementing Organizations and Implementer Attitudes towards Shipping Navigation Service Policies. So in forming a Shipping Navigation Service Policy model in Indonesia, the above variables must be used as parameters; (i). If the Standards and Policy Targets (SSK) variable is increased by 1%, it will have an impact on inter-organizational communication (KIP) of 0.27%; (ii). If the Policy Resources (SDK) variable is increased by 1%, it will have an impact on inter-organizational communication (KIP) of 0.54%; (iii). If the Inter-Organizational Communication (KIP) variable is increased by 1%, it will have an impact on the Characteristics of the implementing organization of 0.34%; (iv). If the Policy Resources Variable (SDK) is increased by 1%, it will have an impact on the Socio-Economic and Political (SEP) variable by 0.63%; (v). The Implementer Attitude variable is directly influenced by the Policy Resources, Organizational Characteristics and Inter-organizational Communication variables. If each variable is increased by 1%, it will have an impact on the Implementer Attitude by 0.27%, 0.39%, and 0.13% respectively; and (vi). Policy Performance is very directly influenced by the Implementer Attitude (SP) and the Characteristics of the implementing organization (KOP). If each variable is increased by 1%, it will have an impact on the Policy Performance of SP by 0.56% and KOP by 0.28%

2. The Shipping Navigation Service Policy Model has a positive impact on the national economy. If the policy model increases by 1%, it will boost the National Economy by 0.71% 3. Impact of Shipping Navigation Service Policy in Indonesia in supporting the national economy Based on the opinion of respondents, the Shipping Navigation Service Policy will provide safety guarantees to ships sailing, provide maritime protection so that it can prevent accidents and oil spills that are detrimental, thus encouraging maritime trade activities at the port through export-import activities that have an impact on the national economy.

Conclusion, Implications and Policy Recommendations

Conclusion

1. There is a positive relationship between the variables of Standards and Policy Targets, Resources, Inter-Organizational Communication of Implementers and Strengthening Activities, Socio-Economic and Political Conditions, Characteristics of Existing Implementing Organizations, and Implementer Attitudes with the Shipping Navigation Service Policy;

2. The Shipping Navigation Service Policy Model has a positive impact on the national economy. If the policy model increases by 1%, it will boost the National Economy by 0.71%;

3. The Shipping Navigation Service Policy will provide safety guarantees to ships sailing, and provide maritime protection so that it can prevent accidents and oil spills that are detrimental, thereby encouraging maritime trade activities and port activities through export-import activities that have an impact on the national economy; and

4. Respondents suggested the need for regulation of equipment reliability and use of technology and digitalization, HR Competence, Regulation/Legality regulation, Stricter law enforcement for violators of shipping navigation rules, organizations that have financial/budget independence, the existence of mature and detailed equipment procurement/maintenance planning, welfare and rewards, government relations and support, coordination between stakeholders, increasing the role of supervision by KSOP and involving the maritime community in socialization and implementation.

Recommendations

Based on the conclusions and implications, the recommendations submitted related to the Shipping Navigation Service Policy in supporting the National Economy are: (i). There needs to be a policy related to the organization implementing Shipping Navigation Services that can improve service performance by being able to manage budget efficiency, not being dependent on the APBN, and having the independence to procure and operate Shipping Navigation Service equipment by optimizing revenue. (ii). Shipping Navigation Services have a significant impact on the national economy so it is necessary to consider the formation of a Shipping Navigation Service Agency that is not dependent on the APBN, maintaining and improving the function of Shipping Navigation. (iii). The implementation of the Shipping Navigation Service Policy is greatly influenced by Compliance in carrying out

supervision and enforcement of implementation in the field, on the other hand, the Harbor Master and Port Authority Office and the Port Organization Unit Office carry out the function of compliance with the implementation of regulations. So it is necessary to regulate the function of supervision and enforcement by mitigating the risk of ineffectiveness and inefficiency because on the other hand the Navigation District office has the authority to develop but compliance supervision is carried out by other work units.

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