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Implementation of Pioneering Sea Transportation in the Regional Transportation Office of the North Sulawesi Province

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Abstract. The purpose of the research is to find out, analyze and describe the Policy on the Implementation of Pioneer Sea Transportation at the Regional Transportation Office of North Sulawesi Province. The method used in this research is qualitative research method. The data sources in this research are informants, events or activities and documentation. Data collection techniques in this study were in-depth interviews, observation and documentation. Meanwhile, the data analysis technique uses an interactive model with components, namely data collection, data display, condensation and verification. The results showed that the implementation of digital-based information systems for pioneer ship services faced several obstacles, mainly due to the uneven internet network in the North Sulawesi region. The lack of inter-island potential data is a major obstacle in determining the priority of ship routes in pioneer sea transportation services. The absence of government officers who supervise directly on board during the trip is due to the absence of a budget to finance personnel assignments. The availability of the budget for pioneer sea transportation in North Sulawesi still focuses on operational costs and routine maintenance of ships. The lack of synchronization between agencies, limited communication with the central government, and unoptimal collaboration with the private sector and the community, such as the lack of synchronization in program planning, implementation, and evaluation make coordination between agencies in the implementation of pioneer sea transportation in North Sulawesi less than optimal.

Keywords. Policy Implementation, Pioneering Sea Transportation, Digital Based Information System

A. Introduction

Indonesia has islands spread from Sabang Island to Merauke Island from Miangas Island to Rote Island, including small outer islands and directly bordering other countries. To reach these islands, special attention and policies are needed so that the people who live in them can be well served (Arianto, 2020) [1].

North Sulawesi has 353 islands and within them there are 12 Outer Islands and 2 of them are directly adjacent to the neighboring Philippines with extreme water conditions because they are in the high seas of the eastern Pacific Ocean. The economic structure of some of the

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people who live on the outermost small islands is still in the lower middle category due to limited accessibility and human resources in developing existing natural resources.

Until now, commercial shipping has not been able to serve the area because each island has a small population and is far apart from the economic center so that the operational burden of the ship cannot be covered by the cost of passenger tickets. For this reason, the Pioneer Sea Transportation service program is one of the best solutions and strategies in seeking to improve the welfare of the community by building inter-island connectivity through the availability of smooth transportation facilities and affordable costs by the purchasing power of the community because sea transportation is the main sector in supporting the administration of government, development and society in the archipelago, especially in the Sangihe Islands Regency, Siau Tagulandang Biaro Islands Regency and Talaud Islands Regency of North Sulawesi Province.

Pioneer sea transportation has a very important role in connecting remote islands with other areas, both regionally and nationally. Indonesia, which is the largest archipelago in the world, pioneer sea transportation is the backbone in facilitating community mobility and shipping goods between regions (Kadarisman et al., 2016) [2]. North Sulawesi Province, as one of the archipelagic provinces in Indonesia, has great potential in developing a pioneering sea transportation system.

Pioneering sea transportation services in North Sulawesi Province are still faced with various obstacles and challenges. These constraints include, among others, the lack of adequate port infrastructure, the limited number of adequate and modern vessels in accordance with the characteristics of the region, the length of travel time, the lack of accessibility of information related to ship schedules and routes, and shipping security and safety issues. As a result, the effectiveness and efficiency of pioneer sea transportation services in this region are still not optimal.

Pioneer sea transportation not only has economic impacts, but also social and environmental impacts. With a good pioneer sea transportation service, it will allow people in remote areas to access health services, education, and markets more easily, including environmentally friendly pioneer sea transportation can also help in the preservation of the marine environment and coastal ecosystems (Widodo, 2023) [3].

In North Sulawesi, there are currently 5 (five) pioneer sea vessels serving 5 (five) routes by visiting 32 (thirty-two) seaports spread from Bitung City, North Minahasa Regency and the Nusa Utara Islands area (Sanguhe, Sitaro, Talaud Islands). The management of pioneer sea transportation public services is managed by the Directorate General of Sea Transportation of the Ministry of Transportation through the Bitung Port Authority Office and Tahuna Port Operator Unit Office as well as the Base Port.

The consistency and sustainability of the program for the Implementation of Public Service Activities of State-Owned Pioneer Ships in Disadvantaged, Remote, Outermost and Border Areas (3TP) is expected to be able to realize the 6th Asta Cita, namely Building Indonesia from the village and from below for economic equality and poverty eradication by changing the existence of the community on the Outer Small Islands from underdeveloped and isolated to the Front Porch of an advanced and prosperous Indonesia. The Regional Transportation Agency which carries out the duties and functions of the Governor as the representative of the central government in the region, especially in the field of transportation, carries out proposals, monitoring and evaluation of the implementation of pioneering sea transportation public services in North Sulawesi Province.

Therefore, an in-depth and comprehensive evaluation of the pioneering sea transportation policy in North Sulawesi Province is very important, starting from the

information system, route pattern, monitoring system, condition of facilities and infrastructure, as well as inter-agency coordination relations and budget availability. By conducting a comprehensive evaluation, it is expected that various obstacles faced in the implementation of pioneer sea transportation services will be identified, as well as formulating appropriate improvement strategies to improve the quality, effectiveness and efficiency of these services. Thus, community mobility in Disadvantaged, Remote, Outermost and Border (3TP) areas can be better fulfilled, and the economic and social potential of the region can be more optimally utilized.

Based on the background of the problems described above, the authors are interested in conducting this research entitled "Implementation of Pioneer Sea Transportation Implementation at the Regional Transportation Office of North Sulawesi Province. The purpose of the research is to find out, analyze and describe the Pioneer Sea Transportation Implementation Policy at the Regional Transportation Office of North Sulawesi Province.

B. Method

This research was conducted using a qualitative approach, because qualitative research emphasizes the process of searching for meaning, revealing the meaning, behind the phenomena that arise in research, with the aim that the problems to be studied are more comprehensive, in-depth, natural and what they are and without much interference from researchers to the facts that arise (Moleong, 2013) [4].

The focus of the research is to see the extent of the implementation of Pioneer Sea Transportation in North Sulawesi Province, with indicators: information system, route pattern, supervision system, condition of facilities and infrastructure, budget availability, and coordination between agencies.

The data collection techniques used were observation, interviews and documentation studies. The data analysis technique uses an interactive analysis model from Miles and Huberman (1992) in Sugiyono (2017), namely: data collection, data reduction, data display, and conclusion drawing/verification [5].

C. Result and discussion

Information System

An information system is a combination of various information technology components that work together and produce information in order to obtain a line of communication in an organization or group. In organizing pioneer shipping, information systems are very important because they are used as a means of information related to the certainty of ship arrival and departure times (Sitorus et al., 2016) [6].

Based on observations and interviews in the field, it was found that 1) there are digital-based information system applications that are still less than optimal due to uneven internet network constraints; 2) The success of pioneer ship services is highly dependent on the reliability of information systems that can be accessed by the public quickly and accurately; 3) The importance of information systems to provide assurance of pioneer ship services; 4) Operators and responsible persons must innovate to provide information systems that are affordable and easily accessible to the public.

The implementation of a digital-based information system for pioneer ship services faces several obstacles, mainly due to the uneven internet network in the North Sulawesi region. This reduces the public's accessibility to important information such as ship schedules, routes, and load capacity.

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In fact, the reliability of a fast and accurate information system is very important to ensure the certainty of pioneer sea transportation services. Limited internet network infrastructure in remote areas results in uneven public access to information systems. Important information such as departure schedules, seat availability and ticket prices cannot be accessed in real time. Available information systems are often less intuitive, making it difficult for people, especially in the 3TP areas, to use them. In addition, many digital-based information services are not supported by offline services that allow people to access information without an internet connection. Communities using pioneer ship services often have not been educated on how to access available information systems. This has led to reliance on traditional methods such as announcements at ports, which are often inaccurate.

Meanwhile, Article 10 of the Minister of Transportation Regulation No. 48/2018 regulates the importance of transparency and the availability of information on pioneer sea transportation services for the public. This regulation encourages service managers to develop information systems that can be accessed by the public at large.

According to Davis (1989) in the Technology Acceptance Model (TAM), the successful adoption of information technology is strongly influenced by perceived usefulness and ease of use [7]. Pioneer ship information systems should be designed to provide direct benefits to users with a simple interface. Research by Sudrajat et al. (2024) shows that the adoption of digital-based information systems in marine transportation improves operational efficiency and accelerates response time to community needs. However, this study also emphasizes the importance of supporting infrastructure, such as a stable internet network [8].

The success of pioneer ship services is highly dependent on the reliability of information systems that are fast, accurate, and easily accessible to the public. Barriers such as uneven internet networks and lack of public education must be overcome through hybrid solutions, infrastructure improvements, and collaboration between the government, ship operators, and internet service providers. These measures will not only support the implementation of Minister of Transportation Regulation No. 48/2018 but also improve accessibility and public satisfaction with pioneer sea transportation services.

Based on relevant theory, research, and regulations, the following steps can be taken to overcome obstacles related to Hybrid Information System Development: 1) Offline Services: Develop an SMS or USSD (Unstructured Supplementary Service Data) based information system that can be accessed without an internet connection. 2) Lightweight Applications: Creating mobile applications designed to work in areas with low internet connection. 3) Network Infrastructure Upgrade: Collaborate with internet service providers to improve network coverage in remote areas. Utilize satellite technology to provide internet connections in hard-to-reach areas. 4) Education and Socialization: Conduct training for communities on how to use information systems, both online and offline. Involve local governments and communities in disseminating information about pioneer ship services. 5) Improved System Integration: Integrate the information system with vessel operational data to provide real-time information to the public. Provide specialized interfaces for vessel operators to manage schedules and capacity more efficiently. 6) Government Support: Apply for a special budget allocation for the development and maintenance of the information system. Provide incentives to ship operators who innovate in providing digital-based information services.

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Route Pattern

The sea route pattern is a travel plan carried out by ships, both fixed and regular (liner) and not fixed and irregular (tramper). The route pattern of pioneer ships is fixed and regular as determined by the Director General of Sea Transportation (Pramita & Danandjojo, 2014) [9].

Based on observations and interviews in the field, it was found that 1) The main obstacle in the preparation of route patterns is the lack of data on the potential of inter-island transportation; 2) Local governments need to make efforts to obtain data on inter-island potential; 3) Low number of passengers and volume of freight transportation.

The lack of inter-island potential data is a major obstacle in determining the priority of ship routes on pioneer sea transportation services. Inadequate data on passenger needs, freight volumes, and the socio-economic conditions of each region cause the preparation of route patterns to often be off target. Lack of Surveys and Research Local governments have not routinely conducted surveys and research related to inter-island transportation needs. Limited budgets make the collection of data on the potential of the region often constrained by the lack of budget for surveys and analysis. Technology Limitations The use of technology such as GIS (Geographic Information System) and big data for mapping regional potential is still minimal. This results in some routes being less than optimal, both in terms of efficiency and usefulness for the community.

The regulation states in Article 7 of the Minister of Transportation Regulation Number 48 of 2018 emphasizes the importance of preparing route patterns based on community needs and regional potential to ensure the usefulness of pioneer sea transportation services. The results of this study are supported by previous research by Santoso (2020) showing that the preparation of sea transportation route patterns based on regional potential data can increase operational efficiency by up to 25%. This data includes population, logistics needs, economic potential, and inter-island passenger volumes [10]. And supported by the theory According to Ackoff (1989) in decision-making theory, accurate and relevant data is the main basis for making effective strategic decisions. Without adequate data, decisions taken tend to be speculative and less effective [11].

Strategies to overcome the lack of inter-island potential data can be carried out through various steps involving theoretical approaches, research, and the implementation of relevant regulations. One of the first steps is to conduct routine surveys and research for primary data collection. Local governments can collaborate with universities or research institutions to conduct direct surveys related to inter-island transportation needs, such as the number of passengers, volume of goods, and regional economic potential. In addition, secondary data obtained from the Central Statistics Agency (BPS) and other sectoral reports can be used as an initial reference to map the potential of each region.

The utilization of technology is another important step. Geographic Information Systems (GIS) can be used to map population distribution patterns, economic resources, and potential transportation routes. In addition, Big Data and IoT (Internet of Things) technologies can be utilized to collect real-time data from port and ship activities, so that route requirements can be monitored dynamically.

Capacity building and budget allocation are also important elements. Local governments need to provide a dedicated budget for inter-island potential data collection, including training of personnel in survey techniques and data analysis. Collaboration with the central government, for example through the Ministry of Transportation, can be done to obtain additional funding to support the regional potential mapping program.

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The final step is to empower local communities. Community involvement in the data collection process can be done through interviews, focus group discussions or field surveys. In addition, public awareness needs to be raised by educating the community about the importance of their participation in providing data to support better transportation route planning.

Supervision System

Supervision of pioneer sea vessels is carried out to ensure the implementation of sea transportation in accordance with applicable regulations. Supervision is carried out thoroughly and includes several things, such as: Maritime safety, Efficiency and effectiveness of budget implementation, Guidance and supervision of the implementation of public service obligations (Hapsari et al., 2013) [12].

Based on observations and interviews in the field, it was found that 1) There are no officers from the government who supervise directly when the ship is operating, because there is no budget available to finance the assignment of personnel on board; 2) The Supervisory Consultant only conducts supervision when the ship is docked at the base port; 3) Another obstacle in the implementation of the route pattern is the low number of passengers and cargo volume on certain routes.

The results of the study mentioned that the absence of government officers who supervise directly on board during the trip is due to the absence of a budget to finance personnel assignments. As a result, supervision of vessel operations relies solely on crew reports, which are often less than objective. Supervisory consultants only conduct supervision when the ship is docked at the base port. This results in less than optimal supervision of ship travel, including compliance with schedules, safety, and technical conditions during voyages. And some pioneer sea transportation routes experience low passenger numbers and cargo volumes, which have an impact on the operational efficiency of the ship. This is especially true on routes to remote areas that have small populations and limited economic activity.

Article 4 of the Minister of Transportation Regulation No. 48/2018 stipulates that the government is obliged to provide subsidies for pioneer sea transport routes to ensure affordability and continuity of services despite low demand. Article 7 of Minister of Transportation Regulation No. 48/2018 mentions the importance of comprehensive supervision of pioneer sea transportation operations. However, its implementation is still limited due to budget constraints and lack of available personnel. Article 9 of Minister of Transportation Regulation No. 48/2018 requires a monitoring mechanism for pioneer sea transportation operations to ensure safety, security, and optimal service. However, this regulation does not specifically regulate the presence of officers on board, so it is often ignored in practice. It is clear that the rules regulate so well but the reality that occurs at the research location is not in line with what the rules say [13].

According to Mintzberg (1979), supervision in transportation organizations requires a layered approach that includes monitoring at all critical points, including during transit. Supervision limited to a single location (e.g., the base port) increases the risk of inefficiencies and procedural violations [14]. According to Frederick Taylor's (1911) scientific management theory in Lumingkewas (2023), direct supervision is an essential element to ensure compliance with operational standards. Without direct supervision, the potential for procedural violations increases [15].

Operational surveillance on ships can be addressed through various strategic measures that are based on relevant theories, research and regulations. For short-term solutions, crew training can be conducted so that they can carry out some of the supervisory duties during the

voyage. While in the long term, allocating a special budget to place supervisory officers on board according to safety and service standards is a priority.

Layered surveillance can be implemented through the use of technology, such as GPS-based monitoring systems and onboard CCTV cameras, to monitor operations in real-time during voyages. Additional inspections also need to be conducted at the port of destination, not just at the base port, to ensure compliance with operational procedures.

In the face of increasing passenger and cargo demand, service diversification can be a solution by offering additional services, such as the transportation of regional superior commodity goods to increase cargo volume. Service promotion also needs to be intensified to increase public awareness of pioneer sea transportation through information campaigns. In addition, collaboration with local governments is important to develop economic activities in remote areas that are the destination of sea transportation routes.

Adjustment of route patterns is done by periodic evaluation of existing routes to adjust services to the needs of the community and potential loads. Increasing government subsidies for low-demand routes as mandated by Article 4 of Minister of Transportation Regulation No. 48/2018 is also a strategic step. New schemes in the pioneer sea transportation subsidy service system can be studied to improve its effectiveness and sustainability.

Condition of Facilities and Infrastructure

The condition of pioneer ship facilities and port infrastructure greatly affects the level of sea transportation services to ensure the security, safety and smooth operation of pioneer sea transportation.

Based on observations and interviews in the field, it was found that 1) There are port facilities that have been damaged and need to be repaired; 2) Fenders, docks and lighting must be rehabilitated immediately; 3) Inadequate ship conditions are a major obstacle in transportation facilities.

Port facilities in North Sulawesi are in poor condition, with several key components such as fenders, docks, and lighting in need of immediate rehabilitation. In addition, the inadequate condition of vessels, both in terms of age and safety equipment, is a major obstacle in supporting efficient and safe pioneer sea transportation. Vessels used in pioneer sea transportation services are often old, with safety equipment that is not up to standard. This increases the risk of accidents, especially in bad weather conditions or rough waters. Damage to fenders and docks make it difficult for vessels to safely berth, disrupting the loading and unloading of goods and passengers. Meanwhile, the lack of lighting at ports increases safety risks, especially during night operations.

Article 7 of the Minister of Transportation Regulation No. 48/2018 states that port infrastructure must meet technical and safety standards to support the smooth operation of pioneer sea transportation. Damage to facilities such as fenders, docks, and lighting should be a major concern in periodic maintenance by port managers. Article 8 of Minister of Transportation Regulation No. 48/2018 states that vessels used in pioneer sea transportation services must meet seaworthiness standards and be equipped with adequate safety equipment. This shows the need for strict supervision of the condition of the ships operated.

The quality of port facilities plays an important role in supporting connectivity between regions. Poor port facilities can cause operational inefficiencies and jeopardize the safety of service users (Mulyono, 2017) [16]. This theory supports the results of this study which mention port facilities that have been damaged and need to be repaired, Fenders, Docks and lighting must be rehabilitated immediately.

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Strategic steps can be taken to overcome obstacles related to port facilities and ship conditions by referring to relevant theories, research, and regulations. Rehabilitation of port facilities is a top priority, with a focus on repairing fenders, docks and port lighting using the existing budget or additional funding from the central government. Periodic maintenance is also important by establishing a specialized team that monitors the condition of facilities on a regular basis and makes immediate repairs when necessary. In addition, modern technologies that are more durable and environmentally friendly can be adopted for components such as fenders and lighting to improve efficiency.

Ship rejuvenation is the next step that can be taken by replacing an aging fleet of vessels with newer vessels that are more efficient and compliant with safety standards. If replacement is not possible, a ship rehabilitation program is an alternative to improve seaworthiness. In addition, improving safety equipment on ships needs to be done by equipping ships according to international regulations to ensure operational safety.

Collaboration between agencies is a key factor in overcoming this obstacle. Coordination with the Ministry of Transportation is needed to obtain additional budget allocations for facility rehabilitation and vessel rejuvenation. Cooperation with the private sector can also be utilized to attract investment in the development and maintenance of port infrastructure.

The involvement of local communities is also an important element. Communities can contribute to the oversight of port facilities and vessel conditions to ensure that local needs and interests are properly accommodated. This participatory approach not only improves the effectiveness of monitoring but also strengthens community support for facility and vessel management.

Availability of Budget

Budget availability in the implementation of pioneer sea transportation in the North Sulawesi Provincial Transportation Office refers to the amount of funds allocated and available to support all aspects of the implementation of pioneer sea transportation services in the region.

Based on observations and interviews in the field, it was found that 1) Limited Budget for Infrastructure Development; 2) Dependence on Funds from the Central Government; 3) uneven budget distribution.

Budget availability for pioneer sea transportation in North Sulawesi still focuses on operational costs and routine maintenance of vessels. This includes fuel subsidies, crew salaries, and basic technical maintenance. The available budget tends to be allocated to ports with high economic activity, while ports in remote areas receive a much smaller allocation. As a result, remote areas experience gaps in the quality of pioneer sea transportation services. The allocation of these funds does not cover service quality improvement needs such as budget availability for passenger meals and facility modernization, thus reducing the effectiveness of the implementation of the pioneer sea transport program.

The implementation of pioneering sea transportation in North Sulawesi is largely funded by the central government through the Ministry of Transportation. The Provincial Transportation Office has limited control over the budget, and often has to adjust priorities in line with central policies. This dependency causes the decision-making process to be slow, especially if the budget submission is delayed or does not match the specific needs of the region. This dependency sometimes affects the smooth implementation, especially if there are constraints in the disbursement of funds or a reduction in the national budget. North Sulawesi faces budget constraints in developing port infrastructure, such as docks, warehouses and

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loading and unloading equipment. Many pioneer ports are still in poor condition to support optimal sea transportation operations. One of the main obstacles is the lack of funding allocation for port infrastructure development, such as the construction of docks, procurement of loading and unloading equipment, and improvement of access roads. The available budget allocation is more often directed to ship operations rather than long-term infrastructure investment. This limitation causes some pioneer ports in remote areas to remain in an inadequate condition, hampering the distribution of goods and community mobility. Efforts to improve facilities are often delayed as budget priorities are diverted to other needs that are considered more urgent.

Article 4 of Minister of Transportation Regulation No. 48/2018 stipulates that the central government is responsible for providing subsidies to support the sustainability of pioneer sea transportation. However, this regulation also suggests synchronization between the central and local governments, which is often not optimally realized. Articles 7 and 8 of Minister of Transportation Regulation No. 48/2018 emphasize the importance of the government's role in providing proper infrastructure to support the smooth running of pioneer sea transportation. However, implementation in the field is often hampered by inadequate budget allocations. Article 9 of Minister of Transportation Regulation No. 48/2018 mandates that government subsidies and support must cover all areas targeted for pioneer sea transportation services, including remote areas. However, the implementation of this policy is often hampered by planning that is not needs-based.

The results of the research described above on the limited budget for infrastructure development are similar to the results of research by Setiawan and Heikal (2024), which concluded that port infrastructure development is a key factor in improving the connectivity of remote areas. This study also shows that ports with adequate facilities have higher utilization rates than ports with limited infrastructure [17].

Based on the theory, research, and regulations, described earlier, it appears that if the government prioritizes budget allocations for critical and strategic infrastructure development, improves the efficiency of the use of funds through regular evaluation of budget effectiveness, gives more authority to local governments to manage transportation funds, so that decisions can be faster and more relevant, uses a needs-based approach to ensure remote areas get an adequate portion of the budget, inviting investment from the private sector and international institutions to support Port infrastructure development, and adopting a digital system to monitor budget allocations and usage in real-time, which can prevent misuse of funds which if these things can be implemented consistently, can help overcome budget constraints in the implementation of pioneer sea transportation, while improving connectivity and community welfare in North Sulawesi.

Coordination between Agencies

Inter-agency coordination is a crucial element in the implementation of pioneer sea transportation, especially in areas such as North Sulawesi that have geographical and administrative challenges.

Based on observations and interviews in the field, it was found that 1) Lack of Inter-Agency Synchronization; 2) Limited Communication with the Central Government; 3) Suboptimal Collaboration with the Private Sector and Communities.

The results of the study mentioned the lack of synchronization between agencies, limited communication with the central government, and suboptimal collaboration with the private sector and the community, such as the lack of synchronization in program planning, implementation and evaluation, making inter-agency coordination in the implementation of

pioneer sea transportation in North Sulawesi show various weaknesses. This includes delays in vessel schedules, distribution of goods, and maintenance of port infrastructure. In addition, communication barriers between the Provincial Transportation Office and the central Ministry of Transportation often slow down budget submissions and subsidy realization.

If you look at the Minister of Transportation Regulation No. 48/2018, it is clearly stated and this regulation is the legal basis for the implementation of pioneer sea transportation. In Article 7, it is stated that the central and local governments must work together to support the implementation of pioneer sea transportation, including in terms of providing adequate infrastructure, managing operational subsidies, monitoring and evaluating services in an integrated manner. Article 8 underlines the importance of coordination between ship operators and government agencies to ensure timely schedules and effective distribution of goods. However, realization in the field often does not run optimally due to the lack of regular coordination mechanisms. According to Henry Mintzberg (1979) in organizational theory, effective coordination requires a clear division of roles, smooth communication, and integration between the various actors involved. Mintzberg emphasizes that coordination failure is usually caused by a lack of compatibility between the existing system and local needs. This opinion is supported by Fayol (1916) in Lumingkewas (2023), who states that "unity of command" and "unity of direction" are essential to avoid conflicts of interest between agencies and ensure synergy in policy implementation.

Based on theory, research and regulations, it appears that strategic measures such as the establishment of regular coordination forums which should involve the Ministry of Transportation, Provincial Transportation Offices, vessel operators and the private sector to align priorities and accelerate decision-making, improved transparency and communication where the implementation of technology into a shared dashboard to monitor vessel schedules, subsidies and infrastructure status can reduce communication barriers, involving local communities in the preparation of schedules and routes to ensure services meet user needs, as suggested by previous research and simplifying budget application procedures and subsidy management, in line with the spirit of the Minister of Transportation Regulation, and infrastructure status can reduce communication barriers, involving local communities in the preparation of sea transport schedules and routes to ensure services match user needs, as suggested by previous research and simplifying budget submission procedures and subsidy management, in accordance with the spirit of the Minister of Transportation Regulation No. 48/2018, to accelerate the implementation of programs that can be applied to improve coordination between agencies. It is expected that if everything goes well according to existing mechanisms and regulations, the implementation of pioneer sea transportation can run more effectively, inclusively, and in accordance with local needs, while strengthening synergies between the agencies involved.

D. Conclusion

Based on the results of research and discussion related to the implementation of pioneer sea transportation in the North Sulawesi transportation office, it is concluded as follows:

1) The implementation of public services for pioneer ships is still less than optimal due to an inadequate information system, so that the public does not get accurate information on the schedule of departure and arrival of ships.
2) Weak pioneer ship operational supervision system, resulting in the performance of pioneer ship services that do not meet service standards in accordance with applicable regulations.

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3) The current route pattern has not been able to reach all 3TP islands due to the lack of data and information on the potential of each island, so that the formulation and determination of route routes cannot meet the expectations of the island community.
4) Damage to port facilities and inadequate ship conditions are the main obstacles in the implementation of pioneer sea transportation in North Sulawesi. Based on infrastructure theory and previous research, rehabilitation of facilities and rejuvenation of ships are urgent steps in line with the Minister of Transportation Regulation No. 48/2018.
5) Budget limitations and low coordination between relevant stakeholders, resulting in less than optimal pioneer ship services.
6) Inter-agency coordination in the implementation of pioneer sea transportation in North Sulawesi shows various weaknesses due to the lack of synchronization between agencies, limited communication with the central government, and not optimal collaboration between the private sector and the community, as well as a lack of synchronization in program planning, implementation, and evaluation.

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