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# Analysis of Fakfak Port Readiness as a Consolidation Port in West Papua

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**ABSTRACT**

This research was conducted at the Fakfak Port in the West Papua region, which serves as a collection port and logistics distribution center. This study aims to determine the extent of the readiness of the Fakfak Port in terms of its potential strengths, weaknesses, and opportunities that could support the Fakfak Port as a consolidation port. The data obtained are both qualitative and quantitative and are processed using the Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis method. Furthermore, it is arranged with the Internal External (IE) matrix to determine the company's position. The study results show that the greatest strength, namely the operational performance and utility of the Fakfak Port facilities, has improved from year to year with a significance level of 4.0 and a weight of 3.0. However, the weakness of the Fakfak Port is the lack of separation between passenger and cargo ports, with a significance level of 3 and a weight of 1.8. Opportunities that can be utilized are the supporting nodes for industrial and trade activities in the Fakfak Regency, with a significance level of 3.5 and a weight of 3.2. The biggest threat to Fakfak Port is the faceline of Pier I (water depth in front of Pier I), which is only ± 3 m. The IE results show that the Fakfak Port has the opportunity to be used as a consolidation port based on the factors.

## 1. INTRODUCTION

As a distribution center of regional transportation networks, port development has a huge impact on city governance and the lives of its residents, both in terms of social, economic, and environmental aspects [1]. In particular, the challenges of port logistics organization and management have become a major focus of current port city governance [2]. Meanwhile, economic development and growth are important for countries in the region to address social challenges, such as poverty and inequality. However, failing to achieve this sustainably may have adverse impacts on coastal ecosystems, coastal livelihoods, and economies in hinterland areas [3]. Thus, port-city relations have become an important factor influencing the sustainable development of port cities. In particular, the debate on whether to continue to provide large amounts of logistics infrastructure development land for ports has always been a major debate in the policy-making process. [4]. In addition, city planning and port planning are under different administrative institutions, and collaborative management strategies for port city logistics in various sectors have not been fully developed. Therefore, it is urgent to transform existing logistics modes in port cities and establish complementary urban incentive policies.

According to Vaillancourt [5], consolidation is "generally understood in the business literature as the combination of certain activities or materials that have common attributes". Consolidating goods is one of the key strategies companies use to cut costs, and it has been explored in various contexts. For example, inventory consolidation involves gathering goods at a central storage location. Another potential approach is port consolidation, which could help improve service efficiency, strengthen national logistics competitiveness, and support the development of hub ports [6]. In transportation, smaller shipments are often combined into a single load to boost efficiency [7], and similar practices are applied in retail through shipment consolidation [8]. More recently, Montecinos, Ouhimmou, Chauhan, Paquet, and Gharbi have discussed how logistics platforms for sharing 'less-than-truckloads' can improve transportation efficiency in urban environments [9].

Shortage of products in a particular supply chain may significantly impact the economy by constraining both individual and overall economic activity. Disruptions at ports can spread to other network components, resulting in wider supply chain losses [10]. Enhancing ports' adaptability to unexpected events is critical to ensuring stable port operations in the long term [11].

Resilience represents a collective responsibility shared by all stakeholders, thus requiring collaborative efforts among

various stakeholders to enhance resilience [12, 13]. Therefore, governments, port operators, and major supply chain companies around the world have reached a consensus to enhance port resilience and ensure safe and smooth operations during emergencies.

Resilience of Fakfak Port by improving facilities and services to support economic activities and the comfort of port users. Port resilience is largely determined by its ability to continue operating and offering services and infrastructure to ships, cargo, and other customers during disruptions (UNCTAD Trade & Development) [14].

Nowadays, ports have gradually gone beyond their traditional definition as a sea and land link, and not only provide value-added logistics, but also offer related services such as industry, trade, finance, recreation, and real estate development. Therefore, ports not only function as an integral part of the transportation system, but also as a key subsystem of the production, trade, and logistics system [15]. Ports are critical infrastructure for economic activities that are vulnerable to the impacts of processes caused by climate change, such as sea level rise or wave patterns [16]. Ports are the hubs of waterway transportation and trade [17]. Therefore, improving sustainable port management to balance economic growth with environmental protection remains a major challenge for coastal and port management [18]. Port sustainability is based on three pillars of sustainable development: economic, social, and environmental goals [19].

Smart ports are targeted at optimizing port performance using technology-based solutions. Although the term “smart port” has been frequently used recently, its exact definition is still unclear. The generally accepted concept of a smart port is a port equipped with new technological solutions such as a real-time location system throughout the port, smart port security solutions [4, 20], and enhanced tracking and tracing systems [21]. Fakfak Port implements modern technologies such as Autogate Pas, e-Money, and port zoning to improve operational efficiency and service to the public. The emergence of technology in ports has transformed maritime logistics, greatly improving the efficiency of port operations [22].

Based on Government Regulation Number 61 of 2016, the role of the port is, among others: a node in the transportation network according to its hierarchy, a gateway for economic activities, a place for transportation mode transfer activities, a support for industrial and/or trade activities, a place for distribution, production, consolidation of cargo or goods, realizing the archipelago outlook and state sovereignty [23]. Fakfak Port, located in West Papua Province, Fakfak Regency, is a port that functions as a transshipment or transfer of cargo and an industrial function. The transfer of cargo is in the form of goods or people, and the industrial function is to offer a service industry (transportation) that can cooperate with surrounding companies. The Central Statistics Agency (BPS) reported that the loading and unloading of goods in Fakfak Regency in 2023 experienced fluctuations from time to time. This fluctuation in logistics distribution undoubtedly affects the prices of less stable goods, as prices are always influenced by both the volume and availability of such products. In addition, the low loading rate compared to the unloading rate shows the inequality of the exchange of goods in this area. As a result, the fulfillment of consumption and community needs becomes uncertain. When viewed from the geographical aspect, three sides are bordered by the sea. In fact, this area connects the Province of Southwest Papua with other areas. Therefore, this district is a strategic area in increasing the contribution of logistics for the people of West Papua in general [24].

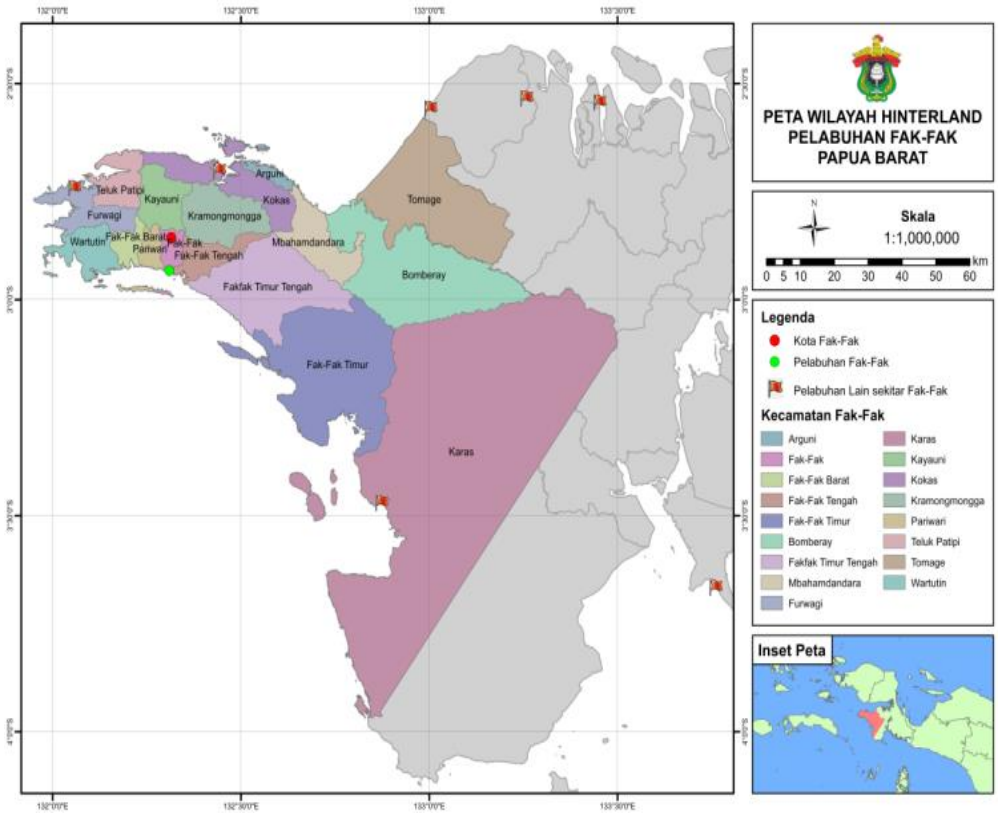


**Figure 1.** Map of Fakfak Regency
Source: Fakfak Regency Government 2016

According to the Indonesian Development Road Map issued by the National Development Planning Agency (Bappenas), Fakfak Port can be encouraged to become a consolidation port. Moreover, the Ministry of Transportation, through the Directorate General of Sea Transportation (Hubla) in the Focus Group Discussion (FGD) activity held in Bogor on November 3, 2022, has planned to determine the shipping lane entering Fakfak Port. This was emphasized by Hengki that "the existence of Fakfak Port must be maximized to support the basic needs of the community in the West Papua province, especially Fakfak Regency". The study on the development of Fakfak Port as a consolidation port in the context of developing the Eastern Indonesia region, especially West Papua, is not only important but also relevant to the potential material resources owned by this region.

Fakfak Port is located in West Papua Province. Fakfak Regency itself is located at 120°12'–122°30' East Longitude (BT), and 131120°15'–122°30' East Longitude 2°25'–4° South Latitude (LS). The area has an area of 722.52 ha for residential land, 627.58 ha used as services/offices, and 9.9 ha for fields/dry fields, and the rest is used for other things. Fakfak itself is one of the oldest cities in Papua. In the past, this area was known as the best nutmeg producer in the archipelago. This port is a class IV port and has been under the management of PT. Pelindo IV (Persero) since 1991 based on PP. No. 59. The map of Fakfak Regency can be seen in the following image.

Based on Figure 1 regarding the role of the port based on Government Regulation Number 61 of 2016 point five, namely the port as a place for distribution, production, and consolidation of cargo or goods, Fakfak Port as a port for collecting and distributing logistics needs to be studied more deeply for its potential, readiness, and advantages that can be used as a consolidation port in West Papua. This is supported by the research results of Mousa et al. [25], whose research can help the government make the right decisions so that these centers play a development role in accordance with the logistics function and norms in the spatial scope of their cities. Damietta Port can be a supporting facility for the preparation of strategic plans for cities around the port.

## 2. METHODOLOGY

The location of this research is focused on Fakfak Port. This port is a class IV port and has been under the management of PT. Pelindo IV (Persero) since 1991 based on PP. No. 59. This study employed both quantitative and qualitative approaches utilizing primary and secondary data. Primary data were obtained through questionnaires distributed to key stakeholders such as employees of KSOP (Port Authority and Harbor Master Office) Class IV Fakfak, interviews with the Head of Traffic and Transportation, Head of Safety, Head of the Fakfak Port Office, and other related parties, as well as direct observation. Secondary data were gathered through documents related to Fakfak Port and Fakfak Regency, such as the KSOP annual report, Fakfak RPJMD, and other documents. The collected data were analyzed using SWOT analysis. analyzed by researchers using SWOT analysis. The SWOT analysis scheme used can be seen in Figure 2.

Based on Figure 2, each quadrant has the following categories:

Quadrant I is a profitable situation. This is due to the strengths and opportunities that the port has. In quadrant I, the position of strengths and opportunities can be used as a strategy to support port policies in improvement and growth (Determination of quadrant positions based on IFAS and EFAS matrices).

Quadrant II is a situation facing threats, but the port still has strengths. Quadrant II, although in a threatened position, the port can still carry out a strategy to utilize strengths in the long term, such as expansion, or creating branch ports (diversification) (Determination of quadrant position based on IFAS and EFAS matrices).

Quadrant III is a situation where there are opportunities, but it is also constrained by several internal weaknesses. This position causes the port position to minimize the weaknesses it has or review the strategy to achieve existing opportunities (Determination of quadrant position based on IFAS and EFAS matrices).

Quadrant IV is a very dangerous situation. This position brings together the weaknesses and threats faced by the port. In this position, the port implements a survival strategy for operational continuity (Determination of quadrant positions based on the IFAS and EFAS matrices).

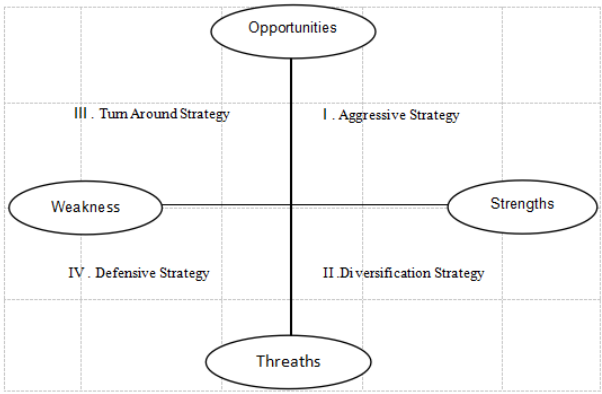


**Figure 2.** SWOT analysis diagram [26]

## 3. RESULTS AND DISCUSSIONS

### 3.1 Internal environmental conditions of Fakfak Port

Analysis of internal port factors is a stage for identifying strengths and weaknesses in facing competition.

3.1.1 Weaknesses

a. Existing Condition of Container Docks

Fakfak Port has three piers for the existing condition of container moorings, which are not good (cannot be used) due to insufficient depth and the presence of navigation hazards, such as corals that appear in front of the pier, so that containers are moored at Pier II. This is also supported by the results of interviews and questionnaires with a significance level of 3 (three), which means that the existing condition of container moorings at Fakfak Port is in the inadequate category.

b. Dock Land Area

In the planning of the development of Fakfak Port as a consolidation port, land expansion is needed. It is known that the area of the Fakfak Port pier is currently 120 meters long and 12 meters wide, which is still inadequate. Based on the results of interviews and questionnaires, the level of

significance of the area of the pier is 3 (three), meaning inadequate.

c. Parking Facilities Management

Effective parking management is a consideration that needs to be acted upon by the management, especially the Fakfak Port. Effective parking management is useful for improving the order and smoothness of activities at the Fakfak Port, such as separating the parking locations for two-wheeled and four-wheeled vehicles, as well as for trucks carrying goods. In addition to the separation of locations, it can also be related to the time given for each passenger and goods pick-up, so that they do not pile up and can hinder the smoothness of port activities. The results of interviews and distribution of responses showed a significance level of 3 (three), which means less. This means that the Fakfak Port has not implemented adequate parking management that can support the smoothness of port activities.

d. Separation of Passenger and Cargo Ports

Fakfak Port is a logistics collection and distribution port. The increasing number of loading and unloading of goods and passengers has made the activity of Fakfak Port quite dense. Based on an interview with one of the port managers, it was said that there was a need for separation between cargo and passenger ports. This is also supported by the results of the questionnaire which showed a significance level of 3.5 (three point five) which means very lacking, in other words, a separation between passenger and cargo ports is needed.

e. Land Ownership

Land ownership is a fundamental thing that needs to be considered in land expansion to make Fakfak Port a consolidated port. Land ownership is also a challenge for port management. Based on the results of interviews and questionnaires, the level of significance is 3 (three), which means less. This means that the land ownership status of Fakfak Port is still unclear. One source indicated that the presence of customary land rights affects access to land ownership at Fakfak Port, posing both a challenge and a constraint to its development and expansion.

f. Port Services

Port services are services related to ships, the process of loading and unloading passengers and goods, and even securing parking facilities. Fakfak Port, which is a logistics distribution and collection port, is certainly expected to maximize its services. Both in terms of service facilities for prospective passengers and goods to services for pick-ups. Based on the results of interviews and questionnaires, there is a significance level of 3 (three), which means it is still in the less-than-optimal category. The need for improved port services which will later become a consolidated port.

3.1.2 Strengths

a) Shipping activities in the Fakfak Regency include domestic shipping, pioneer shipping, and people's shipping. Based on the Decree of the Director General of Transportation Number KP 815/DJPL/2019 concerning the Pioneer Sea Transportation Route Network for the 2020 Fiscal Year, the pioneer ship routes that pass through Fakfak Port have been determined as follows:
   - Manokwari Base, Route Code R – 87;
   - Pangkalan Sorong, Route Code R – 91;
   - Pangkalan Sorong, Route Code: R – 96;
   - Pangkalan Sorong, Route Code R – 113.

   Additionally, the Decree No. KP 818/DJPL/2019 concerning Public Service Obligations for Economic Class Passenger Sea Transportation in 2020 includes the following Pelni Ship Routes through Fakfak Port:
   - KM. Tidar;
   - KM. Nggapulu;
   - KM. Tatamailau;
   - KM. Sangiang.

   Moreover, Decree No. KP.912/DJPL/2019 regarding the Sea Freight Transportation Route Network for 2020 identifies the sea toll route passing through Fakfak Port as:
   - Tanjung Perak Base, Route Code T – 11.

b) There are ship anchoring and mooring services covering domestic shipping, pioneer ships and sea tolls. Port activities at Fakfak Port include port services, implementation of government activities, and other economic activities. Port services at Fakfak Port include ship anchoring and mooring services (domestic shipping, pioneer shipping, and sea tolls), loading and unloading services (containers, general cargo, bag cargo, pioneers, sea tolls), and passengers. Ship anchoring and mooring services have several important uses, especially in the context of domestic shipping, pioneer ships, and sea tolls. Of course, with this, security and safety can be realized properly, shipping efficiency is achieved, which is indicated by the loading and unloading process being carried out quickly, and most importantly, ship access to the port can increase economic activity in the surrounding area so that it has a positive impact on the local trade and industry sector.

c) The status of Fakfak Port as a collecting port causes the movement of goods and passengers to other provinces and the Main Port to be directed through Fakfak Port. Viewed from a geographical perspective, the position of Fakfak Port is quite strategic because it is located in the middle of Papua Island, opposite Panjang Island, and the islands in the eastern part of Maluku Province.

d) Other provinces, such as Papua, are in an area of about 210 km from this port. It can be said that Fakfak Port is one of the main axis ports in the south of Papua Island. The existence of ports around Fakfak Port is a Local Feeder Port and acts as a supporting port for Fakfak Port. Fakfak Port is a Collecting Port, so the movement of goods and passengers from the hinterland area of Fakfak Port to other provinces and the Main Port is directed through Fakfak Port. With these considerations, it is estimated that the hinterland of Fakfak Port covers the entire area of Fakfak Regency, namely: Fakfak District, West Fakfak, East Fakfak, Central Fakfak, Karas, Bomberay, Kramomongga, Teluk Patipi, Pariwari, Wartutin, Central East Fakfak, Arguni, Bahamdandara, Kayuni, Furwagi and Tarmug. The main commodities produced from the seventeen hinterland districts include nutmeg, cocoa, coconut, cloves, cashew nuts, sweet potatoes and cassava, and fruit products (bananas, avocados, rambutans, guavas, pineapples, mangoes, durians, and jackfruits).

e) Fakfak City District serves as a development area unit focused on the industrial, fisheries, and forestry sectors. Fakfak Regency is one of the areas included in the four development areas of West Papua Province. The spatial structure of the West Papua Province is arranged into four SWPs (Development Area Units). The division of SWP is followed by the development of hierarchical centers and the provision of infrastructure networks, especially transportation. Thus, an integrated relationship between SWPs will be created in the West Papua Province. In this

case, Fakfak Regency is included in SWT 4, whose development focus is the industrial, fisheries, and forestry sectors. This is because the region has large water and forest areas with abundant resources.

f) The status of Fakfak Port as a collection port causes the movement of goods and passengers to other provinces, and the Main Port is directed through Fakfak Port.

g) The flow of ship visits to Fakfak Port has increased over the years. The types of ships visiting Fakfak Port include cargo ships, container ships, passenger ships, pioneer ships, sea toll ships, and state ships. The total number of ship visits increased from 2010 to 2019, namely by 6.8%, where the average growth for each type of ship was: container ships 7.6%, and passenger ships 18.4%. In 2019, there was a significant increase in pioneer ship visits, while cargo ship visits decreased (since 2016, there have been no recorded cargo ship visits) due to changes in packaging modes from general cargo to containers. The overall growth of ship GT increased by an average of 7.1% over 10 years (2010–2019). Passenger ship GT increased by 5.01% where the average capacity of each ship in 2019 was 9,880.89 GT. Likewise, the GT of container ships increased by 10.31% with a capacity in 2019 of 6,446.53 GT per ship.

h) Operational Performance and Utilities of Fakfak Port Facilities are improving from year to year. The performance of Fakfak Port in the 5-year period (2015–2019) has generally increased. Ship time at the port (Turn Round Time/TRT) in the last 5 years has decreased by an average of 10.37%. From 2015 to 2018, ship time at the port was 40 hours, and in 2019, it decreased to 23.42 hours. Meanwhile, ship time at the dock (Berthing Time/BT) increased by an average of 2.81%, where in 2015 to 2018, ship service time at the dock was 18 hours, and in 2019, there was an increase to an average of 20.03 hours. In terms of goods service performance, there was a significant decline in 2019, where general cargo ship services in 2018 amounted to 16 T/G/J, decreasing by 76.4% to 3.77 T/G/J in 2019. Likewise, the performance of goods and services on bag cargo ships decreased significantly by 100%, from 18.00 T/G/J in 2018 to 0 T/G/J in 2019. Meanwhile, with the change in packaging mode from general cargo/bag cargo to containers, there was a significant increase in container ship goods services from 0 T/J in 2018 to 11.67 T/J in 2019.

### 3.2 External environmental conditions of Fakfak Port

3.2.1 Opportunities

a. Supporting Industrial and Trade Activities in Fakfak Regency

Fakfak Port is a logistics collection and distribution port. The port that serves the loading and unloading process of goods needed by companies or industries in Fakfak Regency, as well as production results that will be distributed to various regions, greatly assists the trade system. The increase in the loading and unloading process at Fakfak Port indicates that the logistics distribution process in Fakfak Regency can support the smooth running of trade activities in the area. Thus, supporting the fulfillment of industrial needs has an impact on the economy of the surrounding community. Based on the results of interviews and questionnaires, a significance level of 3.5 (three point five) was shown, which means that Fakfak Port has a great influence in supporting industrial and trade activities in Fakfak Regency.

b. Logistics Distribution Center Port in West Papua

Fakfak Port is the central port for logistics distribution in West Papua. This shows that logistics distribution in West Papua uses sea transportation modes originating from the Fakfak Regency, especially through Fakfak Port. The distribution of logistics, such as fulfilling the needs of the people of West Papua, is certainly one of the influences on economic growth in the region. Based on the interviews and questionnaire results, a significance level of 3 (three) was shown, which indicates a strong potential. In other words, Fakfak Port has a fairly large opportunity to become a consolidation port, given its role as the center of logistics distribution in West Papua.

c. Collecting Port

The capacity of Fakfak Port as a collecting port creates an opportunity for a consolidation port in West Papua. The geographical location of Fakfak Regency is based on its three sides bordering the sea. This area connects the Province of Southwest Papua with other areas. Therefore, this district is a strategic area for increasing the contribution of logistics for the people of West Papua in general, including the hinterland area around the Fakfak Port. Based on the results of interviews and questionnaires, the level of significance is 3 (three), which means good or Fakfak Port as a collecting port can become a consolidation port.

3.2.2 Challenges

a. Disaster-Prone Areas

Disaster-prone areas are protected areas that are categorically prone to landslides, earthquakes, landslides due to faults and fractures, and flooding. In Fakfak Regency, areas classified as disaster-prone include steep hill slopes and regions with a history of faults and earthquakes, particularly around the Onin Peninsula in western Fakfak.

b. Topographic Conditions

The topographic conditions of Fakfak Regency vary from lowlands to hilly areas. Viewed from the topographic aspect, it is dominated by areas with slope conditions > 40% which is 2,297,964 ha, areas with a slope of 0%–15% covering an area of 1,434,636 ha, and the rest are slopes ranging from 15%–40%, with the following grouping:

1) Flat, with an altitude of 0–50 m above sea level, found in the western region in most of the Fakfak, West Fakfak, and East Fakfak Districts;

2) Hilly, with a height of 50–1,000 m above sea level, is found in the Fakfak and Kokas areas;

3) Mountains, with an altitude of over 1,000 m above sea level, are located in the northern part of Fakfak.

c. Passenger Transition From Ships to Public Transport

The flow of passengers and cargo loading and unloading at the Fakfak Port fluctuates every year (BPS Fakfak Regency 2023). Based on the results of an interview with a port officer, the minimum passenger terminal can only accommodate 125 people, while the number of passengers is approximately 400 people/ship. This shows that the transfer of passengers from ships to terminals and public transportation can lead to congestion. However, the distribution of questionnaires shows that this does not have a significant effect on the planning of the Fakfak Port as a consolidation port with a score of 2 and a weight of 1.7

d. Faceline of the Pier

Fakfak Port has three piers. At Pier I, the water depth, especially in front of the pier, is approximately 3 meters,

which becomes an obstacle when container ships need to dock. The faceline of this pier is a challenge for the port management to make it a consolidation port. Based on the questionnaire results, this factor has a significant influence on the plan of Fakfak Port as a consolidation port with a score of 3 and a weight of 1.5.

### 3.3 SWOT identification

This analysis is based on the results of the internal factor evaluation using the IFE Matrix and the external factor evaluation using the EFE Matrix.

**Table 1.** The categorization for rating and weight

| Significant Level | Category Weight |
|---|---|
| 4: Very strong | 0.20: Very strong |
| 3: Strong | 0.15: Above average |
| 2: Strong enough | 0.10: Average |
| 1: Very weak | 0.05: Below average |

Source: Rangkuti [26]

Based on Table 1, the level of significance of internal strategic factors, namely strengths and weaknesses, several indicators are at a significance level of 3-4. Shipping activities include domestic shipping, pioneering shipping, and people's shipping, adequate port facilities, there are ship anchoring and mooring services, the status of Fakfak Port as a collecting port, and there are security procedures at each port facility at a significant level of 3.5 which indicates that these points are very important in supporting the readiness of Fakfak Port as a consolidation port. Additionally, Fakfak Port functions as a development area unit that focuses on the industrial, capture fisheries and forestry sectors; the flow of ship visits has increased from year to year; the existing condition of container moorings is not good; the expansion of the dock area is inadequate; the governance of port facilities is not optimal; there has been no recognition of land ownership; and port services are not optimal at a significance level of 3.0 which indicates that these points are important in supporting Fakfak Port as a consolidation port. Meanwhile, the operational performance and utility of Fakfak Port facilities have improved from year to year at a significant level of 4.0, which shows that in realizing the achievement of Fakfak Port as a consolidated port, the most important thing that must be achieved is an increase in operational performance and utilities from year to year.

Based on the level of significance of external strategy factors, namely opportunities and threats, it is in the range of 2-3.5. The only port in West Papua, as a central port for logistics distribution and Fakfak Port as a collecting port is at a significance level of 3.0, which indicates that the indicator is very important in supporting the potential of Fakfak Port as a consolidation port. Additionally, Fakfak Port, as a key supporting node for industrial and trade activities in Fakfak District, with a significance level of 3.5, indicates its important potential in supporting the readiness of Fakfak Port as a consolidation port. On the other hand, certain challenges must be considered including the physiographic conditions of the mountainous, hilly, and densely forested area; the shift in transportation modes from ship passengers to public transportation which has the potential to cause congestion; and the depth of the water in front of the pier (pier faceline) is only ± 3 m at a significance level of 2.0, which indicates that the point is quite important to consider in realizing Fakfak Port as a consolidation port in West Papua.

**Table 2.** Results of internal factor analysis

| No. | Internal Strategy Factors | Significant Level | Weight | Rating | Weight *Rating |
|---|---|---|---|---|---|
| | **Strengths** | | | | |
| 1 | Shipping activities include domestic shipping, pioneering shipping, and people's shipping. | 3.5 | 3.0 | 0.08 | 0.23 |
| 2 | Port facilities are adequate. | 3.5 | 3.0 | 0.08 | 0.23 |
| 3 | There are ship anchoring and mooring services. | 3.5 | 3.2 | 0.08 | 0.24 |
| 4 | Status of Fakfak Port as a collecting port. | 3.5 | 3.0 | 0.08 | 0.23 |
| 5 | There are security procedures at every port facility. | 3.5 | 2.8 | 0.08 | 0.21 |
| 6 | It is a development area unit that focuses on the industrial, fishing and forestry sectors. | 3 | 2.8 | 0.07 | 0.18 |
| 7 | The flow of ship visits increases from year to year. | 3 | 3.0 | 0.07 | 0.20 |
| 8 | Operational performance and utilities of Fakfak Port facilities are improving from year to year. | 4 | 3.0 | 0.09 | 0.26 |
| | **Strength Amount** | | 3.0 | 0.60 | 1.78 |
| | **Weaknesses** | | | | |
| 1 | The existing condition of container moorings is poor. | 3 | 1.5 | 0.07 | 0.10 |
| 2 | The expansion of the dock area is not yet adequate. | 3 | 1.8 | 0.07 | 0.12 |
| 3 | Port facilities management is not yet optimal. | 3 | 1.7 | 0.07 | 0.11 |
| 4 | There is no separation between cargo and passenger ports. | 3.5 | 1.8 | 0.08 | 0.14 |
| 5 | There is no recognition of land ownership. | 3 | 1.7 | 0.07 | 0.11 |
| 6 | Port services are not yet optimal. | 3 | 1.8 | 0.07 | 0.12 |
| | **Number of Weaknesses** | | | | |
| | **Total IFAS** | | | | 2.47 |

Based on the results of field data collection, the analysis of internal and external factors of Fakfak Port is shown in Figures 2 and 3.

From Table 2, it can be seen that Fakfak Port has eight strength factors, the highest factor is (1) the operational performance and utility of Fakfak Port Facilities which have been improving year by year, with a significance level of 4 and a weighting of 3.0; (2) adequate port facilities, with a significance level of 3.5 and a weighting of 3.0; (3) shipping activities, including domestic shipping, pioneering shipping

and people's shipping with significance levels of 3.5 and 3.0. These factors are followed by the designation of Fakfak Port as a collecting port, the implementation of security procedures at each port facility, its role as a development unit focused on the industrial, fisheries, and forestry sectors, and the increasing number of ship visits year by year.

**Table 3.** Results of external factor analysis

| No. | External Strategy Factors | Level Significant | Weight | Rating | Weight *Rating |
|---|---|---|---|---|---|
| | **Opportunities** | | | | |
| 1 | Supporting hub for industrial and trade activities in Fakfak District. | 3.5 | 3.2 | 0.19 | 0.61 |
| 2 | The only port in West Papua is a central port for logistics distribution. | 3 | 3.0 | 0.16 | 0.49 |
| 3 | Fakfak Port is a collecting port. | 3 | 3.0 | 0.16 | 0.49 |
| | **Amount** | | | | 1.58 |
| | **Threats** | | | | |
| 1 | Disaster-prone areas in West Papua Province include earthquakes, landslides, floods and tsunamis. | 2 | 2.0 | 0.11 | 0.22 |
| 2 | The physiographic conditions of the area are mountainous, hilly and densely forested. | 2 | 2.0 | 0.11 | 0.22 |
| 3 | The shift in transportation modes by ship passengers to public transportation has the potential to cause traffic jams. | 2 | 1.7 | 0.11 | 0.18 |
| 4 | The water depth in front of the pier (pier faceline) is only ± 3 m. | 3 | 1.5 | 0.16 | 0.24 |
| | **Amount** | 18.5 | | 1.00 | 0.86 |
| | **Total EFAS** | | | | 2.44 |

The biggest weakness of Fakfak Port is the lack of separation between cargo and passenger ports, with a significance level of 3.5 and a weight of 1.8. The next weakness is the inadequate expansion of the dock area, with a significance level of 3 and a weight of 1.8. Other weaknesses include the poor condition of container moorings (significance level of 3 and a weight of 1.5), ineffective parking management (significance level of 3 and a weight of 1.7), lack of recognition of land ownership (significance level of 3 and a weight of 1.7), and suboptimal port services (significance level of 3 and a weight of 1.7).

In Table 3, it can be identified that the greatest opportunity to make Fakfak Port a consolidation port is Fakfak Port as a supporting node for industrial and trade activities, with a significance level of 3.5 and a weight of 3.2. Then followed by other opportunities, such as a central port for logistics distribution in West Papua and a collecting port with a significance level of 3 and a weight of 3.0.

The threats to the company are ranked from the largest, namely the depth of the water in front of the pier (pier faceline) of only ± 3 m, with a significance level of 3 and a weight of 1.5. Then followed by disaster-prone areas with a significance level of 2 and a weight of 2.0, the physiographic conditions of mountainous, hilly, and densely forested areas with a significance level of 2 and a weight of 2.0, and the shift in transportation modes by ship passengers to public transportation with a significance level of 2 and a weight of 1.7.

### 3.4 Fakfak Port development strategy as a consolidation port in West Papua

To determine the appropriate strategy for establishing Fakfak Port as a consolidation port in West Papua Province, a matrix is required to describe the port position based on the previously conducted SWOT analysis. In the IE matrix, the position of a company or organization is determined based on Quadrant I-Quadrant IV. If it is in Quadrant I, the recommended strategy is the SO (aggressive) strategy; in Quadrant II, the ST (conservative) strategy is used; in Quadrant III, the WO (competitive) strategy is applied; and in Quadrant IV, the WT (defensive) strategy is implemented. Based on the pie chart above, it can be seen that the position of Fakfak Port in the SWOT analysis is in Quadrant I, where the x and y axis coordinates show positive values with an x value of 1.09 and a y value of 0.72. This shows that Fakfak Port is in a favorable position and has the strength to take advantage of existing opportunities as a consolidation port in West Papua Province. This also indicates that the most suitable strategy to be implemented is the S-0 (aggressive) strategy.

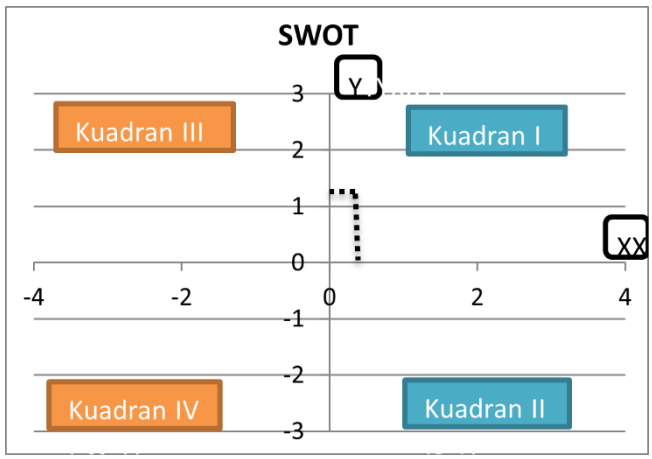


**Figure 3.** IE matrix (internal and external)

Based on Figure 3, it can be seen that the position of Fakfak Port in the SWOT analysis is in Quadrant I, where the x and y axis coordinates show positive values with an x value of 1.09 and a y value of 0.72. This indicates that Fakfak Port is in a favorable position and has the strength to take advantage of existing opportunities as a consolidation port in West Papua Province. Based on this, the SO strategy can be implemented with the following points:

a. Developing marine transportation services to support the optimization of activities in the industrial, fisheries, and forestry sectors.

b. Improving anchorage and mooring services at Fakfak Port to strengthen and realize its role as the only port in West Papua that acts as a logistics distribution route.

c. Increasing the optimization of shipping activities,

including domestic shipping, pioneering shipping, and people's shipping, in encouraging the potential of ports as supporting hubs for industrial and trade activities in Fakfak District.

d. Utilizing adequate port facilities and the operational performance and utilities of Fakfak Port facilities are improving from year to year in supporting industrial and trade activities in the Fakfak Regency.

e. Development of the Fakfak Collecting Port in Fakfak District in the form of an extension of the mooring dock, passenger terminal, and goods storage area to optimize its role as a logistics distribution center.

## 4. CONCLUSIONS

Fakfak Port has the opportunity to be used as a consolidation port in the West Papua Region. The results of the SWOT analysis show that the greatest strength of the Fakfak Port is the operational performance and utility of the Fakfak Port Facilities, which are improving from year to year with a significance level of 4 and a weight of 3.0. However, the main weakness of the Fakfak Port is the absence of separation between the cargo and passenger ports, with a significance level of 3.5 and a weight of 1.8. Furthermore, the opportunities owned by the Fakfak Port are that the Fakfak Port is a supporting node for industrial and trade activities, with a significance level of 3.5 and a weight of 3.2. Meanwhile, one of the key threats faced by the Fakfak Port is the depth of the water in front of the pier (pier faceline) is only approximately 3 meters, with a significance level of 3 and a weight of 1.5. The SWOT analysis is further described through the IE matrix, which is in Quadrant I, where the coordinates of the x and y axes show positive values with an x value of 1.09 and a y value of 0.72. This shows that the Fakfak Port is in a profitable position and has the strength to take advantage of opportunities as a consolidation port in West Papua Province.

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