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Integration Strategy for Kambang and Tangkahan Fish Landing Bases

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ABSTRACT: The Kambang Fish Landing Base is a Type D port (with a service capacity of 2,000 tonnes per year). The fish production of PPI Kambang is the highest in Pesisir Selatan Regency with an existing fishing potential of 1038.15 tonnes, but there will be a decline to 138,832 tonnes by 2022. In 2019, the Pesisir Selatan Regency Government will receive IDR 2 billion in local revenue (PAD) from PP Kambang's operations from ship services and port services. The presence of tangkahans around fishing ports, as happened at PP Kambang, is seen as a cause of 'disruption' to the operation and performance of fishing ports. It is feared that the port will not function, which could disrupt fisheries management in the West Sumatra region. This research aims to identify the root causes of some of the fishing fleets in the PPI Kambang area not landing their catches at PPI Kambang and integration strategies so that catchments around the PPI Kambang area with PPI Kambang in an effort to realise capture fisheries governance that supports the creation of sustainable fisheries. The research was conducted in the PPI Kambang Fish Landing Base Harbour and surrounding Tangkahan in Pesisir Selatan Regency, West Sumatra Province. Test results using SEM analysis show the potential for synergy between PPI Kambang and Tangkahan in terms of supply, landing, production and marketing activities. However, several functional facilities at PPI are still not functioning and need to be repaired and maintained. The alternative priority strategy for integrating PPI Kambang and Tangkahan is to use PPI Kambang as a fish marketing distribution centre. The Kambang Fish Landing Base plays an important role in the marketing distribution of fish for both domestic and export markets.

KEYWORDS: PPI Kambang, Fish Landing Base, Tangkahan , Synergy, Strategy.

I. INTRODUCTION

A fishing port, as specified by Government Regulation Number 27 of 2021 [1] regarding the Implementation of Maritime Affairs and Fisheries, is an area made up of land and surrounding waters with defined boundaries used for government activities as well as fisheries business operations. It serves as a location for fishing vessels to dock, anchor, and/or load and unload fish, equipped with shipping safety facilities and fisheries support activities. In accordance with the decision of the Minister of Maritime Affairs and Fisheries Number KEP.109/MEN/2021 concerning the National Fishing Port Master Plan, the aim of the KEPMEN-KP determination is as a guideline for the central government, regional governments and State-Owned Enterprises (BUMN) and/or the private sector in carrying out the construction, development and management of fishing ports. The Kambang fishing port in Pesisir Selatan Regency is the location for the construction or development of a fishing port listed in the National Fishing Port Master Plan (RIPPN) for 2031-2035. The Kambang fish landing base is a type D port (with a service capacity of 2,000 tonnes per year) which was built by the West Sumatra Province Maritime and Fisheries Service in 2010 as a fish auction site (TPI).

According to the West Sumatra Maritime Fisheries Service (2019) [2], fish production from PPI Kambang is highest in Pesisir Selatan district with existing fishery potential of 1038.15 tons, but there will be a decline until 2022 amounting to 138,832 tons. In 2019, from PP Kambang's operations, the Pesisir Selatan Regency Government received regional original income (PAD) of IDR 2 billion from ship services and port services. When compared with the potential utilization of port facilities, the value of this region's original income is not yet optimal because there are still many fish that do not use PPI Kambang for loading and unloading and placing the fish they catch.

Functional facilities play a role in supporting many activities at fishing ports. Insufficient capacity, unavailability of one of the necessary facilities and an unsupportive layout will hamper the smooth running of various activities at the port. Lubis and Mardianan [3]. Currently, the basic and functional facilities at PPI Kambang are in good condition. The 230 m long pier with a port pool area of 16,000 m2 is sufficient to serve mooring and loading and unloading activities for fishing vessels measuring 5-10 GT. Functional facilities such as cold storage with a capacity of 20 tonnes and petrol stations with a capacity of 16,000 litres are available but are not operational because the port's small income cannot cover operational costs. This small port's income cannot be separated from the still small number of ships using the port because some fishing vessels choose to use three privately owned fishing vessels in locations not far from the port.

Tangkahan is a private fishing business activity that has facilities and activities similar to a fishing port. The existence of tangkahans around fishing ports, as happened at PP Kambang, is thought to be the cause of "disruption" to the operations and performance of fishing ports Simatupang and Lubis [4]. The existence of Tangkahan currently causes a number of problems such as (1) detrimental to national fisheries and the government in terms of income and regional levies (2) incomplete fisheries data, especially production data and the volume of fishing effort (3) decline in fishing port operational activities (4) further decline production at fishing ports; and (5) reduced dependence of fishermen and the community on the operation of fishing ports. It is feared that the port function will not work, which could disrupt fisheries management in the West Sumatra region.

To answer this problem, research was carried out which identified the root causes of some fishing fleets in the PPI Kambang area not landing their catches at PPI Kambang. Additionally, it examined the synergy of activities and utilisation of PPI Kambang facilities in an effort to realise capture fisheries governance that supports the creation of sustainable fisheries.

II. MATERIALS AND METHODS

A. Time and Place

This research was carried out for two months, namely in February-May 2023. The research was conducted at the Kambang Fish Landing Base Harbor (PPI) and the surrounding Tangkahan in Pesisir Selatan Regency, West Sumatra Province (figure1).

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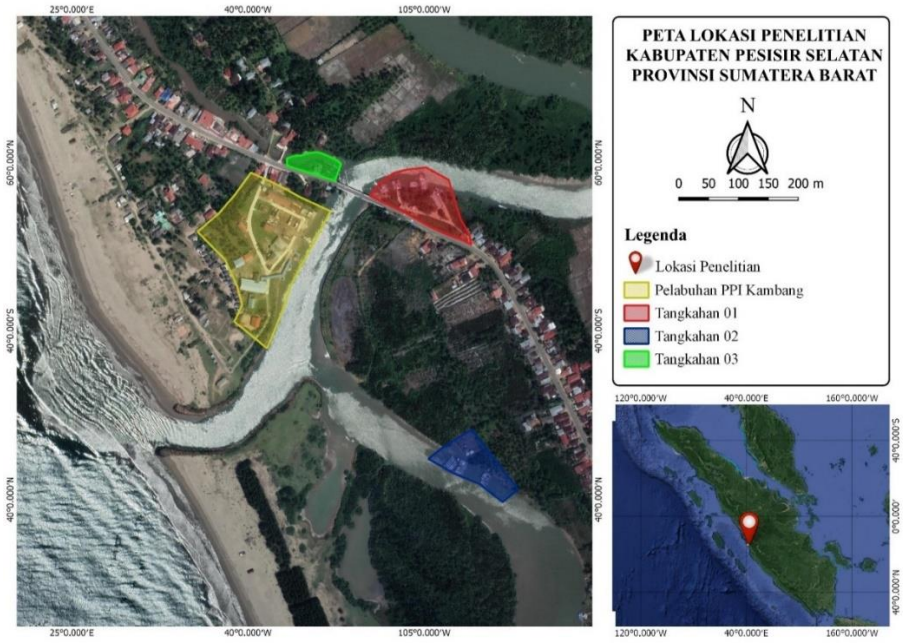

Figure 1. Map of the Research Location.

B. Tools and Materials

The equipment used in this research includes a camera to record and document research activities, stationery to record research activities, Amos21 to create synergy models, SPSS for data input in the field, Microsoft Excel for data processing, and Microsoft Word for writing reports. Apart from that, the material used was a questionnaire to obtain primary data.

C. Method of collecting data

The method of data collection is a survey method. The type of data collected consists of primary data and secondary data. Primary data was collected through observation, interviews and questionnaires based on the research objectives. Secondary data was obtained from literature, which was sourced from fisheries statistics books, scientific journals, research findings, activity reports and case studies relevant to fisheries development activities. Interviews were conducted with the criteria that the interviewee had a direct and indirect interest in PPI and tangkahan management, had an understanding of tangkahan management and was directly involved in the fishing business, was able to provide the necessary information, was a good communicator and was willing to act as a resource person. Data on services and facilities at PPI Kambang and Tangkahan were obtained through direct observation. The information data required consisted of production data and service data. Production data consists of data on catch production volume, catch type, number of vessels, fishing units and fish prices. Service data consist of data on services for the provision, landing and marketing of catches.

The analysis of activities that could be synergised between PPI Kambang and Tangkahan was carried out through direct observation and interviews. The information data needs are adjusted to the recommended sample size

using structural equation modelling (SEM) analysis. Waluyo [5] states that the appropriate sample size is between 100-200 samples used in maximum likelihood estimation technique and suggests that the minimum sample size is 5-10 times the number of indicators estimated. The number of indicators used in this research was 18 indicators multiplied by 7 variables, so the number of samples used in this research was 126 respondents.

D. Data analysis

The identification of services and facilities is carried out descriptively. Identification is carried out at one Fish Landing Base (PPI) and 3 fishing grounds based on activity aspects and availability of service facilities. Service data consist of data on provision of services, landing and marketing of catches. The data are then processed using Microsoft Excel in the form of classification and tabulation of data on catch types, number of vessels, total prices and production volume of catches.

The selection of PPI integration priorities with steps was carried out using Structural Equation Model (SEM) analysis. SEM allows for the direct analysis of multiple dependent and independent variables. Model building can be done in the following steps:

1. Development of Theoretical Models

Based on the preliminary theoretical model, there are several components that will be examined in the relationship between clauses and the development of fish landing bases in Kambang, Pesisir Selatan Regency, namely government policy, connectivity, PPI services, regional distribution and marketing complexity. These components have been developed to see the interactions between these components and to determine which components play a significant role in the integration approach.

2. Preparation of path diagram designs

In this second step, the theoretical model built in the first step is presented in a flowchart that makes it easier to see the causal relationship you want to test. In the flowchart, the relationship between constructs is expressed by arrows. Straight arrows indicate a direct causal relationship between one construct and another. Meanwhile, curved lines between constructs with arrows at either end show the correlation between constructs

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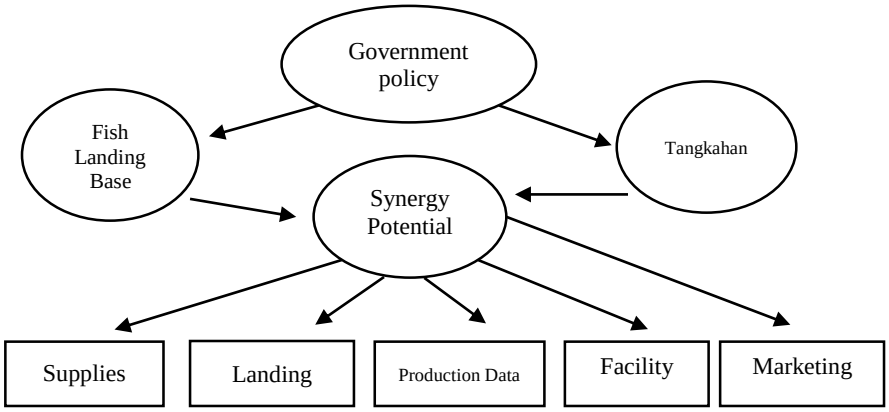


Figure 2. Path Diagram of activities that can be synergized between PPI Kambang and Tangkahan

III. RESULTS AND DISCUSSION

Existing Conditions of Fishing Technology

The fisheries sector is one of the most important sectors in the development of Pesisir Selatan Regency. There are 3 fishing ports managed by the West Sumatra Province Marine Fisheries Service, comprising of 2 coastal fishing ports (PPP) and 1 coastal fishing port (PPP). The locations of the fishing ports are PPP Carocok Tarusan, PPI Kambang and PPI Surantih. According to data from the West Sumatra Province Maritime Fisheries Service, Kambang is one of the areas that has quite a large potential for marine fisheries in the Pesisir Selatan Regency. The basis for the emergence of kambang fish also makes a significant contribution to the fisheries sector of West Sumatra Province. Based on research results, PPI Kambang has distinct characteristics from other port areas and different catches.

The development of the production volume and production value of marine fisheries between 2019 and 2022 at PPI Kambang was 1038.15 tonnes with a production value reaching IDR 25,958,737,000.00 West Sumatra Province 2022 [6]. The dominant catches obtained by fishermen are tuna (*Euthynnus affinis*), skipjack tuna (*Katsuwonus pelamis*), anchovies (*Stolephorus indicus*), flying fish (*Decapterus spp*), mackerel (*Rastrelliger spp*), Spanish mackerel (*Scomberomorus comerson*), trevally (*Selaroides leptolepis*), and horse mackerel (*Scomber japonicus*).

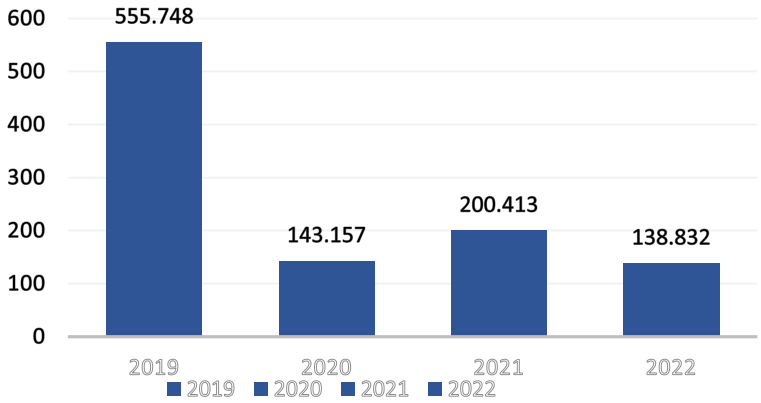


Figure 2. Development of catches at the Kambang fish landing base 2019-2022

Figure 2 shows the fisheries production at PPI Kambang, Pesisir Selatan Regency from 2019 to 2022. In 2019, fisheries production in PPI Kambang was 555.8 tonnes. However, there was a decrease in production from 2020 to 2022, which was 394.95 tonnes. Based on the observation results, the decline in catch was influenced by several factors, one of which was the decline in the number of fishing fleets landing their catch at PPI Kambang and many landing activities in tangkahans around the port area. The existence of this catchment area affects the activities in the fishing port.

To support the smooth running of activities at fishing ports, adequate infrastructure and facilities in good condition are required. The fulfilment of fishing port facilities in accordance with the mandate of statutory regulations demonstrates that support for port services to carry out port functions has been successful. In order to improve the performance and results of fish production, port development is carried out in terms of infrastructure, facilities, and technology to facilitate connectivity between ports and Tangkahan. It is hoped that existing stakeholders can interact in the use of facilities and distribution of catches.

Fishing port support facilities and technology

The operational success of a fishing port cannot be separated from the existing supporting infrastructure factors, one of which is the availability of facilities at the fishing port Najah *et al* [7]. In order to carry out its duties and functions, PPI Kambang Fishery Port is equipped with port facilities, namely basic facilities, functional facilities and support facilities. The basic facilities consist of land, breakwater, dock, jetty, harbour basin, navigation channel, complex roads and drainage. Functional facilities consist of an administrative office, fish marketing area, cold store, ice factory, dock/slip water and clean water supply. Support facilities consist of a guard post, toilet, prayer room, cooperative, fishermen's canteen, official residence, mess, warehouse, hall building and workshop building.

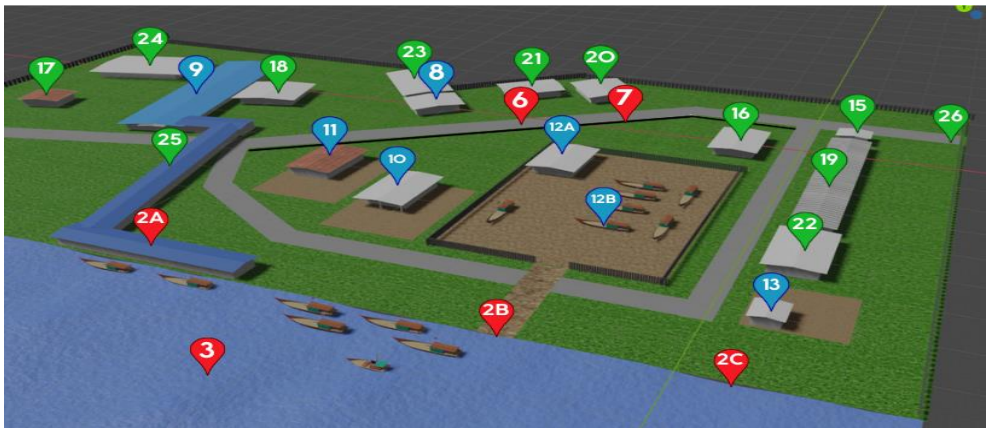


Figure 3. Layout plan of the Kambang fish landing base facilities

Information :

Basic facilities	**Functional facilities**	**Supporting facilities**
Land	8. Administration Office	15. Guardhouse
A. Loading and unloading dock	9. Fish marketing place	16. Prayer room
B. Travelif Pier	10. Cold storage	17. Bath wash toilet
C. Refueling Dock	11. ES Factory	18. Cooperative
Harbor pool	12. Dock/Slipwat	19. Fisherman's Canteen

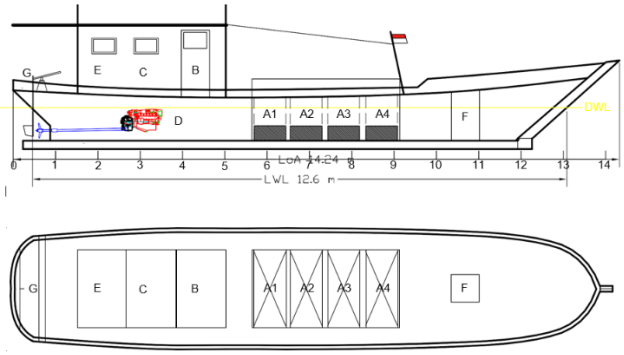
Breakwaters
Sailing Flow
Complex Road
Drainage
13. SPDN
14. Clean Water Supply
20. Official residence
21. Mess
22. Warehouse
23. Hall
24. Workshops
25. loading and unloading corridor
26. Gate

In general, the Kambang Fishing Port has basic, functional and support facilities that are relatively available to support port activities, but they are not yet fully functional and utilised. The reasons why the government-built fishing ports are not yet fully functional include limited operating costs, human resources in existing fishing ports are very inadequate in quantity and quality so that the fishing ports are less professionally managed, and some fishing port facilities do not meet the technical, quantity and quality requirements so that the services provided are not optimal Mahyuddin [8]. The government needs to reorganise the facilities at the Kambang Fish Base so that they can function optimally. This will require increasing capacity and upgrading facilities to improve performance and fish production outcomes. Effective coordination between fishing port managers and related agencies is needed. Fishing port management policies between central and regional governments need to be more synergistic.

Service activities

1. ship services

The Kambang Fishing Pier (PPI) provides berthing, loading and unloading facilities for fishing vessels, the majority of which are 10-11 gross tonnes (GT). These vessels have an overall length (LOA) of 14.24 metres, an overall breadth (BOA) of 2.86 metres and a draught (D) of 1.04 metres with hand line gear. The vessels at PPI Kambang are equipped with Yanmar 33-PK engines and GPS and radio navigation aids. Vessels visiting PPI Kambang not only land the fish they catch and stock up on provisions for the sea, but also carry out ship repairs.



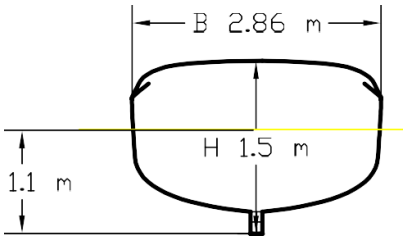


Figure 4. Tugboat at the Goldfish Landing Base

The frequency of ship visits to PPI Kambang has fluctuated over the last 4 years. The lowest number of ship visits occurred in 2020, with 112 ships, while the highest number of ship visits occurred in 2019, with 366 ships. The difference in the number of vessel visits, which decreased from 2020 to 2022, was influenced by several conditions such as the fishing season, unfavourable weather conditions that prevented fishermen from going to sea.

2. Supplies for sea

Provisioning is a very important activity for fishing operations Adi [8]. The activity of distributing supplies for fishing by fishermen at PPI Kambang is brought from outside and inside the port, such as ice as a preservative for caught fish, fuel oil, clean water, food needs, medicines, etc. The amount of fuel and ice carried by boat fishermen depends on the distance from the fishing base to the fishing ground and the length of the fishing operation, whilst the air is adjusted to the number of crew members on board. Previously, clean water and ice were provided by the port management, but in the last year, the generator at the ice factory has been damaged due to a lack of maintenance by the port management. This requires an increase in the technology and capacity of the ice factory generator to produce ice for the needs of fishermen at the Kambang fish landing base.

3. fish landing activities

Fish landing activities at PPI Kambang start with fishermen returning home from the sea and carrying out unloading, weighing, and cleaning of the fish. The process of unloading the fish from the hold onto the ship's deck is carried out by each crew member (ABK) and immediately placed into a basket. The basket containing the fish is then lowered to the fish landing pier and transported to the fish auction place (TPI) using a motorbike rickshaw to be auctioned and marketed Nugroho [9]. Before the fish are auctioned and marketed, the fish are cleaned and separated according to the type and size of the fish, then put in a cold box so that the quality of the fish is maintained.

4. Fish marketing technology

Marketing is a very important activity to do, because this activity brings together sellers and buyers. PPI Kambang provides a fish marketing place to provide facilities for fishermen, fish sellers and consumers Hidayah [10]. Marketing facilities are provided by the Kambang fish landing base, a place for marketing fish, fish baskets for storing fish, cold boxes for cooling fish, then motor rickshaws for transporting fish from pier to TPI. PPI Kambang needs to add fish transport conveyor technology facilities to make it easier to transport fish from fish holding areas to fish processing areas, as well as to move fish from one processing process to another.

Priority analysis of Kambang and Tangkahan fish landing base synergy activities

The selection of priority programmes for synergy activities of fishing ports and fishing ports was carried out using Structural Equation Modelling (SEM) analysis. This analysis was conducted to examine indicators that could influence the spatial interactions Mustaruddin [11] between fishing ports and Tangkahan. It is hoped that these programmes will be able to support interaction and connectivity between fishing ports and fishing ports in the Pesisir Selatan district fisheries area. Spatial interaction between fishing ports and Tangkahan aims to smooth activities and utilisation of facilities with efforts to increase utilisation of facilities and activities of fisheries activities in the PPI Kambang area.

Validation test and construct modification

The initial analysis value showed that the model was not yet fitting according to the modelling requirements that had been determined. Then, construct modification was carried out by eliminating outliers and correlating coefficients between indicator measurement errors (measurement errors).

Table 1. Results of Validation and Variable Modification.

Goodness of fit indices	Requirements for a model fit	Final Analysis	Model Evaluation
X 2 Chi-Squarey	Small Business	120,851	Fulfil
Significance Probability	≥ 0,05	0,512	Fulfil
CMIN/DF (*Chi-squared divided by degrees of freedom*)	≤ 2,00	0,991	Fulfil
RMSEA (*root mean square error of approximation*)	≤ 0,08	0,000	Fulfil
GFI (*goodness of fit index*)	≥ 0,90	0,914	Fulfil
AGFI (*adjusted goodness of fit index*)	≥ 0,90	0,879	Not yet fulfilled
TLI (*Tucker lewis index*)	≥ 0,90	1,007	Fulfil
CFI (*comparative fit index*)	≥ 0,90	1,000	Fulfil

Source: Results of data processing using Adzandi SEM analysis (2023)

After modification, the goodness of fit test results have met the specified requirements, except for AGFI (*derivative criteria*). Because all the main criteria have been met, the model is declared fit and can be used for synergy analysis of activities in PPI and *Tangkahan. The test results also show that the model is significant at a = 0.512. The chi-square significance level shows a smaller* value than the initial test results, namely 120.851. So overall these criteria have met the recommended standards, so it can be found that the model is relatively acceptable or in accordance with the data

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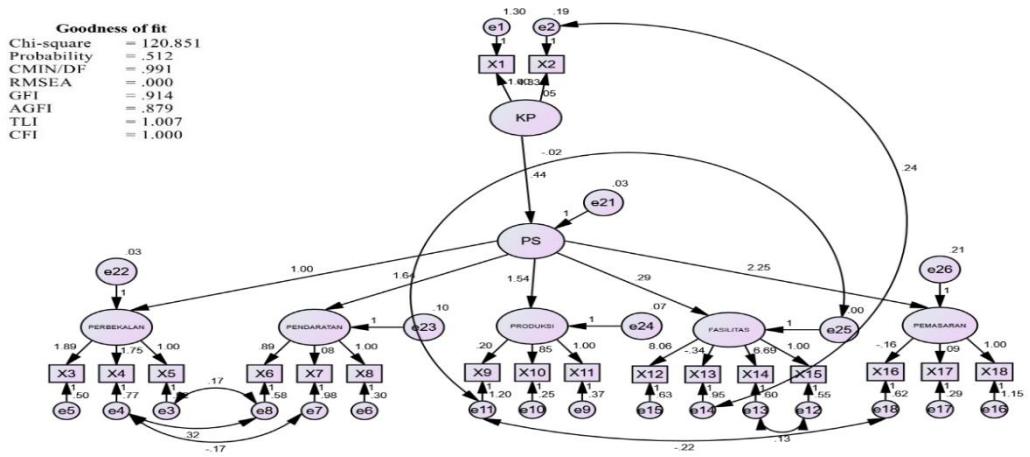

Figure 5. Goodness of fit test results

Based on the goodness of fit test, it shows that the data are suitable for use and are declared fit based on the conditions that have been determined. Next is the regression weight test on the interaction of the construct with other factors.

Table 2. Effect of government policy on other variables

Regresion weights		Estimate	SE	CR	P	Label
PS	← KP	0.442	0.296	1.494	0.135	par_17
X1	← KP	1.000				
X2	← KP	4.331	5.425	0.798	0.425	par_1

The construction of government policy regarding the potential synergy of PPI and Tangkahan has an impact but not a significant one. This is because there are no regional government policy regulations that regulate and supervise permits for fishing activities in Tangkahan in Pesisir Selatan Regency. The regional government needs to immediately make regulations on fishing activities in the Tangkahan Pesisir Selatan Regency. These regulations must include permits for fisheries activities, data collection on catches, supervision of fisheries activities, and protection of the aquatic environment. Then the results of the KP construct analysis of the data collection indicator (X2) show a probability value of 0.425 which is greater than 0.05, which means there is an influence on government policy (KP) but it is not yet significant. This is because up to now, the tangkahan have not reported their catch data to PPI. Therefore, the tangkahan need to be involved in collecting data and reporting their catch regularly and accurately.

Table 3. Influence of Potential Synergy Value of fish landing bases and catchments on other variables

Regresion weights		Estimate	SE	CR		P	Label
Supplies	← Synergy Potential		1.000				
Landing	← Synergy Potential		1.643	0.683	2.405	0.016	par_8
Production	← Synergy Potential		1.539	0.665	2.312	0.021	par_9
Facility	← Synergy Potential		0.291	0.384	0.756	0.449	par_15
Marketing	← Synergy Potential		2.252	1.033	2.181	0.029	par_16

The results of the analysis show that the potential synergy of PPI and Tangkahan towards the landing construct has a probability value of p = 0.016. The probability value is less than 0.05 or significant, which means that Tangkahan and PPI have connectivity or synergy in catch landing activities. We can see this connectivity in the activities of landing fish caught with high economic value which are landed at fish landing bases and in Tangkahan. Then, the results of the analysis of the potential synergy of PPI and steps on production constructs have a significant effect. Likewise, the potential for synergy between fish landing bases and catchments on marketing constructs is also significantly influenced because the probability value obtained is 0.029, which is smaller than 0.05. The potential synergy of PPI and steps towards the facility construct show a probability value greater than 0.05 or not yet significant. This is because several functional facilities at the fish landing base are still not functioning, and facilities need to be repaired and maintained so that they can support the smooth running of fishing activities in the Kambang fish landing base area Mahyuddin [12]. Meanwhile, the potential for synergy between fish landing bases and fishing grounds for supplying construction has been fulfilled.

Table 4. Effect of Supply Activities on other variables

Regresion weights		Estimate	SE	CR	P	Label
X5	← Supplies	1.000				
X4	← Supplies	1.752	0.683	2.564	0.010	par_2
X3	← Supplies	1.886	0.747	2.525	0.012	par_3

The results of the analysis of the influence of the latent construct of supplies on the supply quality indicator (X4) have a probability value of 0.010. The quality of supplies at PPI Kambang is quite good when serving fishing vessels in carrying out supplies for going out to sea. This indicates that this indicator has a significant effect. The Supplies Needs indicator (X3) has a portability value of 0.012, indicating that this construct has a significant effect. The need for supplies is one of the recommendations for the synergy of fish landing bases and tangkahan for the smooth running of fishing activities, seen from the current level of smooth activities of fishermen in tangkahan and PPI in preparing the need for supplies for going to sea which is still not optimal. Based on the results of interviews in the field, fishermen hope that the functional facilities at the fish landing base will soon be repaired and functional again so that they can support fishing supply activities, not only for fishermen at the landing base but also for fishermen in tangkahan. These facilities include functional facilities such as ice factories, SPDN, and cold storage. By improving facility technology and infrastructure,

it will certainly have a positive impact on both parties in supporting supply activities more effectively and efficiently Adi [13].

Table 5. Effect of Landing Activities on other variables

Regresion weights			Estimate	SE	CR	P	Label
X8	←	Landing	1.000				
X7	←	Landing	0.080	0.256	0.314	0.754	par_4
X6	←	Landing	0.887	0.288	3.076	0.002	par_5

The resulting value of the influence of the landing structure on the auction activity indicator (X6) has a probability value for this indicator, indicating that it has a significant influence. Fish auctions are suggested as a way to synergise activities at fish landing sites and tangkahan. Auction activities carried out at fish landing bases and tangkahan function to facilitate marketing activities, facilitate development of the quality of fish caught by fishermen, and facilitate the collection of statistical data.

Table 6. The influence of production activities on other variables

Regresion weights			Estimate	SE	CR	P	Label
X11	←	Production	1.000				
X10	←	Production	0.850	0.242	3.518	***	par_6
X9	←	Production	0.197	0.316	0.623	0.533	par_7

Based on Table 6, the influence of production activities on other indicators shows that the influence of modern technology indicators on ships (X10) has a significant impact which is marked with (***) then the CR value is 3.518 which indicates the CR value is greater than 1.95. PPI Kambang is working to improve fishing vessel technology in the PPI area. This effort is being made to increase the production value of high economic catches. This technological improvement certainly continues to support the use of environmentally friendly fishing gear. One of the efforts being made by PPI Kambang is currently AIS (automatic identification system) technology in collaboration with the Ministry of Communications and Information Technology. The aim of applying AIS technology to fishing vessels includes broadcasting information on ship position, ship speed, direction and other navigation status to other ships and AIS receiving stations on land Arroyo [14]. The application of this technology is still in the trial phase and training is still being carried out for fishermen at PPI and Tangkahan. The use of AIS can make it easier for ships in the PPI and Tangkahan to coordinate when operating and provide information on fishing areas
. The training and coaching indicator (X9) has a value of p = 0.533 and affects the production construct, but it is not yet significant.

Table 7. Effect of Facilities on other variables

Regresion weights			Estimate	SE	CR	P	Label
X15	←	Facilities	1.000				
X14	←	Facilities	6.691	8.399	0.797	0.426	par_10
X13	←	Facilities	-0.336	1.785	-0.188	0.851	par_11
X12	←	Facilities	8.056	10.490	0.768	0.443	par_12

The results of the analysis of testing the facility variable against other indicators show that the probability value is still above 0.05, which means that there is an influence but it is not yet significant. The influence of the construct on the facility quality indicator (X14) p = 0.426 has a positive influence, but not yet significant. The cold storage availability indicator at PPI (X13) p = 0.851 has an influence, but not yet significant. The facility availability indicator at PPI (X14) P = 0.426 has an influence, but not yet significant. The influence of the facility variable on the indicator (X15) shows an absolute value, which means it has a significant effect, and the value is satisfactory
.

Table 8. Influence of Marketing Activities on other variables

Regresion weights			Estimate	SE	CR	P	Label
X18	←	Marketing	1.000				
X17	←	Marketing	0.095	0.113	0.836	0.403	par_13
X16	←	Marketing	-0.163	0.175	-0.933	0.351	par_14

The final result of the analysis of the influence of marketing activities on other indicators shows that the marketing service indicator (X16) affects the marketing construct, but the impact is not significant as the probability value of 0.351 is higher than α (0.05). Additionally, the market information indicator (X17) has a p-value of 0.403, which also has an effect on the marketing construct, but it is not yet significant. The interaction and communication indicator (X18) has a value that meets the criteria, so the interaction and communication indicators for marketing have been fulfilled.

CONCLUSIONS

1. The Kambang fishing base has basic, functional and supporting facilities relatively available to support activities at the port, but they are not yet functioning and utilized optimally
2. The frequency of ship visits at PPI Kambang has fluctuated in the last 4 years. The lowest number of ship visits occurred in 2020, namely 112 ships, whilst the highest number of ship visits occurred in 2019, namely 366 ships.
3. Test results using SEM (Structural Equation Modeling) analysis show the potential for synergy between PPI Kambang and Tangkahan, namely supply, landing, production and marketing activities. Meanwhile, the construction of the facilities is not yet adequate, many functional facilities at PPI are still not functioning, and need to be repaired, maintained and improved the technology of the facilities.

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