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AN ANALYSIS OF FISHERMAN ECONOMY DEVELOPMENT AND FINANCIAL INSTITUTIONS IN SMALL MEDIUM SHIPYARDING INDUSTRY IN BENGKALIS DISTRICT AS A SUSTAINABLE ECONOMY DEVELOPMENT STRATEGY (STUDY ON CV. BENGKALIS MARINE FIBER)

Abstract: This study aims to; a. Analyze the correlation between fish production, number of Fishman ships, and number of ships b. Analyze the feasibility of setting up the small and medium-sized enterprises (SMEs) of shipbuilding

The research is a case study, the method used in this research is quantitative and qualitative quantitative. The sampling technique used in this research is purposive sampling. In the year 2014-2022 in Bengkalis Regency, Indonesia

There are correlations between fish production and the number of ships and fishermen. the financial and institutional research of CV Bengkalis Marine Fiber has great potential to be developed and followed up by business actors with a positive NPV, IRR, and PP

The scope of the research does not cover social aspects.

The research implications emphasize standardization, a strategy for cooperation with business actors consisting of supporting industries, supplying industries, and user industries.

The finding gives insight into government policies and business actors in action

Key words: small and medium-sized enterprises (SMEs); analyses the feasibility; shipbuilding, fishermen, ship, and fish production.

Language: English

Introduction

The concept of economic development is to increase people's income which will result in the improvement of a pattern. In this improvement effort, collaboration from the government, the community, and all elements are needed to participate. Regional development is carried out to achieve important goals, one of which is sustainability then, it needs to be aligned with sectoral development that runs in areas that are focused on potential regional priorities. The location of the island of Bengkalis is very strategically facing the Strait of Melaka. The number of fishermen on Bengkalis Island is quite large, but it continues to decline from year to year. The fisherman's economy is very dependent on the income he earns. The source of fishermen's income comes from the amount of fish production (catch).

According to Samsudin (2021), the amount of fish production is closely related to the number of fish boats owned by fishermen. the availability of shipbuilding companies in the area will make it easier for fishermen to order fish boats that suit their needs (size, shape, function, and price). During the 2014-2022 period, it showed that the production of capture fisheries in Bengkalis Regency decreased, namely in 2014 by 8,926 tons then decreased in 2022 to 4,210 tons. Furthermore, the number of fishermen is also decreasing, namely, in 2014 it amounted to 3,091 fishermen and in 2022 there were 2,843 fishermen. The decrease in the number of fish catches and the number of fishermen is also accompanied by a decrease in the number of fishing fleets/vessels in the Bengkalis Regency from 2014-2022. In 2022 the fleet of fishing vessels in Bengkalis Regency amounted to 603 units, much reduced from 2014 which amounted to 1,090 units.

Table 1. Fish Catch Data, Number of Fishermen and Number of Fisheries Fleets of Bengkalis Regency 2014-2022

Year	Fish Catch (Ton)	number of fishermen	Number of Fishing Fleet
	8,050	3,091	1,090
2014	7,580	2,986	1,159
2015	7,085	2,972	822
2016	6,567	2,945	817
2017			
2018	6,045	2,923	750
2019	5,587	2,891	712
2020	5,033	2,882	684
2021	4,780	2,870	630
2022	4,210	2,843	603

Source: Marine and Fisheries Service of Bengkalis Regency

Fisheries production has a very important role in social and economic development. Marine products are increasing in demand day by day which results in a greater trade to meet the needs of the market. The high need for the market requires an increase in the number of arrest operations (Sangadji, Mustaruddin, & Wisudo, 2013).

The success of fishing operations can be influenced by many factors including the number of fishermen and the number of ships so it is necessary to develop the shipbuilding industry. The shipbuilding industry is globally competitive and is macro-influenced, therefore the government has an important role. All institutions, both government and private, with changes in technology and industry hope that there will be a change in business behavior to be more rational, efficient and of course more profitable. Many studies have been conducted on the influence of various aspects on changes in a business.

One of the interesting things is to test how the development of a business is incentivized to the achievement of business results. Ship Companies (fishing boat shipyard industry) there is only one on the island of Bengkalis. While the small industries are five (5 SMIs). the existence of these SMEs is very little to the needs of fishermen. As a result, it is difficult for fishermen to get catch boats that match the specifications of the area they want. In addition, ordering from outside the area makes it difficult for fishermen, namely long production times, high prices

offered, and the quality of boats that do not meet the specifications desired by fishermen. The purchase of ships is more based on availability in the market and consideration of low prices, not on the suitability of shipping routes. This study aims to; (1) analyze the effect of the number of fishermen and the number of vessels on fishery production in Bengkalis Regency, and (2) analyze the establishment of the shipbuilding industry in the CV Bengkalis Marine company.

The target in this study is a shipyard owned by CV Bengkalis Marine Fiber because this company has been established, but does not yet have a shipyard to mass-produce fishing boats. This study can help the development and improvement of business in shipbuilding and at the same time improve the economy of the community in the research area, cooperation institutions, partners, ship owners, and ship crews (ABK).

Literatur Review

Economic development is determined by the number of human resources and capital in producing goods and services (Todaro, 2016). the availability of capital in fish production in the waters is indicated by the presence of fishing boats. Therefore, the samsudin study (2021) explained that there is a relationship between the influence of the number of fishing boats and the number of fishermen producing fish production. While the number of ships available is determined by the number of providers (IKM shipyards) in an area. The existence of shipyard SMEs is certainly influenced by the business feasibility of establishing the shipping industry. (Jahrizal, 2020)

A feasibility study is an activity that studies in-depth an activity or business or business to be carried out, to determine whether or not the business is feasible to run. (Kashmir & Jakfar, 2003). Studying in-depth means seriously researching the existing information data and then measuring, calculating, and analyzing the results of the research using certain methods. Research conducted on businesses that will be carried out with a certain size so that maximum results are obtained from the research.

Feasibility means that the research carried out in-depth is carried out to determine whether the business to be run will provide greater benefits compared to the costs that will be incurred. In other words, feasibility can be interpreted to mean that the business run will provide financial and non-financial benefits following its desired goals. Feasible here can be interpreted as also providing benefits not only for the company that runs it but also for investors, creditors, the government, and the wider community in general.

In general, there are two types of definitions of institutions, the first is institutions as organizations and the second is institutions as rules of the game or "rules of the game". Institutions as an organization usually refer to formal institutions such as departments in government, cooperatives, banks, hospitals, and the like. Institutions as "rules of the game" are the rules of the game, norms, prohibitions, contracts, and so on in regulating and controlling the behavior of individuals in society or organizations North 1990; Rodgers 1994.

Bromley (1992) likens organizations to hardware and institutions are Software. An institution consists of three main elements, namely jurisdictional boundaries, Property Rights, and rules of representation. One institution is different from another if one or more of these elements are different. To understand the institution more deeply and be able to see the impact of changing institutional alternatives on performance we need to first study the elements of the institution itself Schmid and Allan 1987. The foundation of the institution's analytical framework is to study the impact of alternative institutional changes on changes in human behavior that will eventually result in different performances.

Institutional changes will only result in different performances if they can control sources of interdependence between individuals such as compatibility, high exclusion costs, transaction costs, economies of scale, (joint impact good), and so on.

Methodology

The research method used in this study is a quantitative descriptive method that is descriptive which is a case study. According to Nasir (2005), a case study is a research method that aims to provide a detailed picture of the background, traits, as well as character typical of the case or the status of the individual. The subject studied, in this case, was a shipyard business unit in Bengkalis Regency, by looking at the marketing aspects and technical aspects of the shipyard business.

The sampling method used in this study is the purposive sampling method or intentional. According to Umar (2003), purposive sampling is sampling based on certain characteristics that are considered to have a relationship with previously known population characteristics.ini using the purposive sampling method in determining the location of the sample were to take the location based on the type of shipyard business The sample used in this study is a fiber shipyard entrepreneur in Bengkalis Regency, namely CV Bengkalis Marine Fiber.

CV Bengkalis Marine Fiber is rightly chosen because it is a shipyard business that is more active in the production process and involvement with activities held by related stakeholders so that CV Bengkalis Marine Fiber can represent a sample of shipyard business in Bengkalis Regency, besides that samples are taken from consumers, namely fishermen, related agencies. Institutional Analysis deals with the institutions involved in the process from the input to the output of the shipyard. The economic aspects that will be studied include capital, income, and profits from the fishing boatyard business.

Regression Analysis

In this study, regression analysis was used. Regression analysis can show or determine free variables that have a dominant effect on bound variables. The multiple linear regression equation is as follows:

$Y' = a + b1X1 + b2X2 + …. + bnXn$

Keterangan:

Y	= Dependen variable (predicted values)
X1 dan X2	= Independent variables
a	= Konstanta (value Y' if X1, X2, … Xn = 0)
b	= Regression coefficient (value increase or decrease)

A. Correlation test:

Table 2. Results of Regression Analysis of Number of Fishermen and Number of Fishery Fleet on Fish Catch

| Model	Coefficients		Standardized Coefficients	t	Sig.
	Unstandardized Coefficients				
	B	Std. Error	Beta		
(Constant)	-27.881	10.265		-2.716	.035
number of fishermen (X1)	.011	.004	.627	2.826	.030
Number of Fleet (X2)	.002	.001	.367	1.657	.149
a. Dependent Variable: Fish Catch (Y)					

Based on the results in table 1. below, shows that the regression equation is as follows:

$Y = -27.881 + 0.011 X_1 + (0.002) X_2$

T-Test (Number of Fishermen and Fish Catches)

Fishermen are people who make fishing at sea and in places that are still affected by tides. People who catch fish in fish farming places such as ponds, fish ponds, rivers, and lakes do not include fishermen (Tarigan 2000 in Indara 2017).
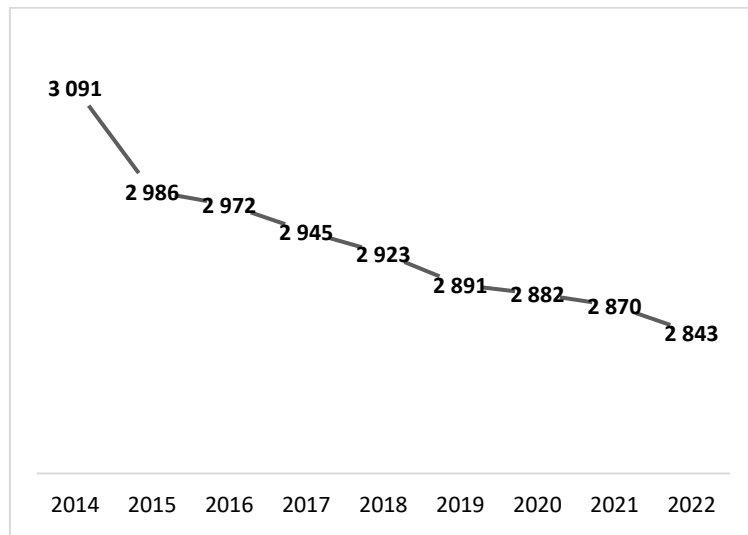
Figure 1. Data on the Number of Fishermen in Bengkalis Regency in 2014-2022
Source: Marine and Fisheries Service of Bengkalis Regency

The number of fishermen in Bengkalis Regency every year continues to decline Based on the results of the study, show that the calculated t value for the regression coefficient of the number of fishermen is 2,826. In addition, when viewed from the significant probability value, the significant value of the number of fishermen (0.030) < (0.05), then partially the number of fishermen has a significant positive effect on fish catches in Bengkalis Regency.

Test t (Number of Fisheries Fleets and Fish Catches)

Fishing vessels or also known as fishing fleets are ships or boats or other floating devices used to carry out survey or fishery exploration activities. Fishing vessels are an important capital in fisheries and marine affairs, besides being able to be used to catch fish, ships are used to maintain fisheries in Indonesia (Fauzi 2010 in Tawakal 2015). The following is data on the number of ships in Bengkalis Regency starting from 2014-2022:
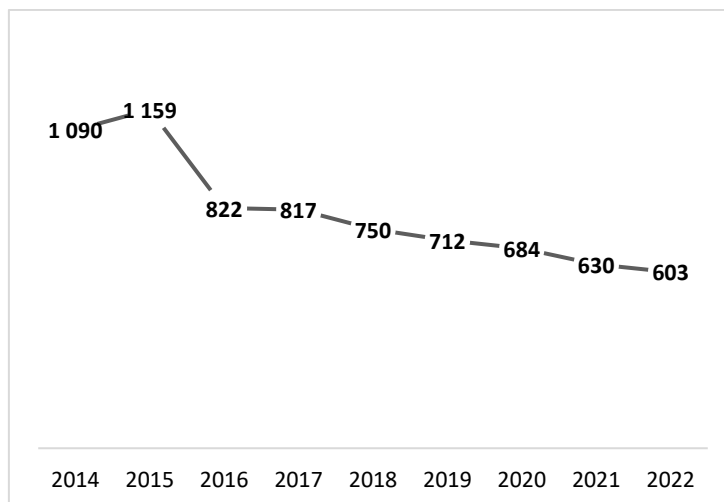
Figure 2. Data on the Number of Fishing Vessels in Bengkalis Regency in 2014-2022
Source: Marine and Fisheries Service of Bengkalis Regency

From the results of the comparison between the t_{count} and the t_{table}, it can be seen that t_{counts} (1.657). In addition, when viewed from the significant probability value, the significant value of the number of ships (0.149) > (0.05), then partially the number of fishery fleets do not have a significant positive effect on fish catches in Bengkalis Regency.

Test F (Variable Number of Fishermen, Number of Fishery Fleets, and Fish Catches)

Table 3. Test Results F Number of Fishermen, Vessels, and Fisheries Production

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.991	2	6.496	42.875	.000[b]
	Residual	.909	6	.152		
	Total	13.900	8			
a. Dependent Variable: Fish Catch (Y)						
b. Predictors: (Constant), Number of Fleet (X2), Number of Fishermen (X1)						

The table above shows the value of the sig. obtained .000 < 0.05 then the correlation between the variable number of fishermen (X1) and the number of fleets (X2) together affects the variable number of fish catches (Y).

Koefisien Determinasi (R^2)

Table 4. Coefficient of Determination Results (R^2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. An error in the Estimate
1	.967[a]	.935	.913	.38923
a. Predictors: (Constant), Number of Fleet (X2), Number of Fishermen (X1)				

From the results of the analysis of the coefficient of determination based on the results above, an R2 value of 93.5% can be obtained, it can be stated that all free variables can explain the diversity of values in the Fish Catch variable by 93.5% and the rest are explained by other variables that are outside the research model.

Financial Feasibility Analysis

Financial analysis of a business is a very important thing to do to determine whether a business is feasible or not to run. Financial analysis can be presented through financial statements obtained from the recorded figures. Financial ratios become the basis for answering important questions regarding the state of financial flows of a business.

Based on the results of the projected net cash flow from the financial statements, a financial analysis is carried out using the following indicators:

a. NPV (*Net Present Value*)

The NPV valuation aims to look at the net present value that the company receives as long as the net cash flow running is deducted from the value of the investment. A business is considered feasible if the value of NPV>0. NPV is calculated by the following formula:

$$NPV == \Sigma_{t=1}^{n} \frac{CFt}{(1+K)t} Io$$

Notes:

CFt = aliran kas pertahun pada periode t
Io = investasi awal pada tahun 0
K = suku bunga (discount rate)
Kriteria penilaian NPV adalah:
Jika NPV > 0, maka investasi diterima.
Jika NPV < 0, maka investasi ditolak.

Table 5. Net Present Value (NPV)

Tahun	FC	VC	TC	TR	Future Value	Diskon Faktor	Present Value
1	1,525,327,600	5,479,927,200	7,005,254,800	11,550,665,984	4,545,411,184	1	3,952,531,464
2	1,525,327,600	5,479,927,200	7,005,254,800	11,550,665,984	4,545,411,184	1	3,436,983,882
3	1,525,327,600	5,479,927,200	7,005,254,800	11,550,665,984	4,545,411,184	1	2,988,681,636
4	1,525,327,600	5,479,927,200	7,005,254,800	11,550,665,984	4,545,411,184	1	2,598,853,597
5	1,525,327,600	5,479,927,200	7,005,254,800	11,550,665,984	4,545,411,184	0	2,259,872,693
6	1,525,327,600	5,479,927,200	7,005,254,800	11,550,665,984	4,545,411,184	0	1,965,106,689
7	1,525,327,600	5,479,927,200	7,005,254,800	11,550,665,984	4,545,411,184	0	1,708,788,426
8	1,525,327,600	5,479,927,200	7,005,254,800	11,550,665,984	4,545,411,184	0	1,485,902,979
9	1,525,327,600	5,479,927,200	7,005,254,800	11,550,665,984	4,545,411,184	0	1,292,089,547
10	1,525,327,600	5,479,927,200	7,005,254,800	11,550,665,984	4,545,411,184	0	1,123,556,128
Total Present Value							22,812,367,040

Source: Research, 2022

NVP = 22,812,367,040 - 20,821,203,200
NVP = 1,991,163,839.67

The results of the financial analysis of ship production show that the Net Present Value (NPV) value is positive, meaning that the Ship Production is profitable. Net Present Value (NPV) is IDR 1,991,163,839.67, the value is more than 0, it can be said that ship production is worth cultivating

b. PP (*Payback Period*)

The PP assessment shows the size or scale of the business so that the company reaches breakeven. The Value of PP is expressed in months or years.

Payback Period = n + (a-b): (c-b) x 1 tahun
Notes:
N = return on investment,
a = reinvestment amount,
b = cumulative total of cash flows in the period to (n).
c = is the cumulative total at one period to (n+1).

=9(20.821.203.200-2.039.672.136/ (21.134.885.599 - 2.039.672.136) x 1(year)
= 9 + (424.481.834. / 1.292.089.546) x 1 (tyear)
= 9 + 0,328 x 12 (year)

= 9year + 3 month + 28 hari

Based on the results of the financial analysis, a PP value of 9,328 was obtained. This illustrates that the return on investment in Ship Production takes 9 years 3 months 28 days. The length of business carried out is for 10 years so that the production of the ship is financially feasible to be cultivated because the period of return-on-investment capital is less than the economic life.

c. IRR (*Internal Rate of Return*)

The IRR assessment aims to determine the internal rate of return (profit rate) of the established business. IRR is an interest rate that equates the initial investment (i) with the cash value (PV) of future cash flows. A business is considered worthy of acceptance if the value of the IRR> interest rate or opportunity cost of capital (IRR>df).

$$IRR = P1 - C1 \frac{P2-P1}{C2-C1}$$

Information:
P1 = Interest rate 1
P2 = Interest rate 2
C1 = NPV 1
C2 = NPV 2
The IRR assessment criteria are:

a. If the IRR >from the predetermined interest rate, then the investment is accepted.

b. If the IRR < from the predetermined interest rate, then the investment is rejected.

Table 6. Internal Rate Return (IRR) Of Ships with a Discount Factor of 15%

Year	Cash Flow	Diskon Faktor	PV
1	4,545,411,184	0.870	3,952,531,464
2	4,545,411,184	0.756	3,436,983,882
3	4,545,411,184	0.658	2,988,681,636
4	4,545,411,184	0.572	2,598,853,597
5	4,545,411,184	0.497	2,259,872,693
6	4,545,411,184	0.432	1,965,106,689
7	4,545,411,184	0.376	1,708,788,426
8	4,545,411,184	0.327	1,485,902,979
9	4,545,411,184	0.284	1,292,089,547
10	4,545,411,184	0.247	1,123,556,128

Source: Research, 2022

Total PV	22,812,367,040
Initial Investment Amount	20,821,203,200
NPV 1	**1,991,163,840**

Table 7. Internal Rate Return (IRR) Of Ships with a Discount Factor of 18%

Tahun	Cash Flow	Diskon Faktor	PV
1	4,545,411,184	0.847	3,852,043,376
2	4,545,411,184	0.718	3,264,443,539
3	4,545,411,184	0.609	2,766,477,575
4	4,545,411,184	0.516	2,344,472,521
5	4,545,411,184	0.437	1,986,841,120
6	4,545,411,184	0.370	1,683,763,661
7	4,545,411,184	0.314	1,426,918,357
8	4,545,411,184	0.266	1,209,252,845
9	4,545,411,184	0.225	1,024,790,546
10	4,545,411,184	0.191	868,466,565

Source: Research, 2022

Total PV	20,427,470,105
Initial Investment Amount	20,821,203,200
NPV 2	-393,733,095

IRR = ir + NPV1/NPV2-NPV1(i2 -i1)
= 15% +1.991.163.839/-393.733.095 - 1.991.163.839. (18%-15%)
= 0,15 +1.991.163.839 /2.384.896.934. (0.03)
= 0,15 +(0.834) x (0,03)
= 0,15 + 0,025
= 0,175
= 17,5%

The results of the analysis show that the IRR value of ship production is 17.5% with NPV at a 15% interest rate of Rp 1,991,163,840 and the NPV value at an interest rate of 18% of Rp - 393,733,095 is negative or does not provide profit. The interest rate on return on investment (IRR) of ship production over the past ten years shows a figure of 17.5% so ship production is worth working on. If the interest rate is more than 17.5% then ship production) will experience at the Break-Even Point (BEP).

Empirical Results
Financial Feasibility Analysis
The target for the analysis of financial aspects in a business feasibility study can be seen from two very general sides, namely profit and sustainability. If a business does not make a profit, then it should not be feasible to run (Unfeasibile), and also if the profit is

short-term, then this can also be considered bad because a good profit is a sustainable one. Analysis from the financial side is necessary to find out the profitability of a business from a financial point of view, especially from the ability of the entrepreneur to return the capital issued.In this discussion, a financial analysis was carried out for ship production for a production period of 10 years. To analyze the feasibility of the business it is necessary to make some assumptions about the service process parameters and operating costs of the project every year in the past 10 years based on the investment in equipment to be used by CV Bengkalis Marine Fiber (BMF) Marine, and the minimum life other than buildings and vehicles is 10 years, so the equipment may need to be added or upgraded until the project is completed.

Net Present Value (NPV)

Ship production requires considerable costs, especially for raw materials. This is because Ship Production is raw material is the main component in carrying out the production process. In addition, the raw materials are only concentrated and there is no alternative raw material. Therefore, the costs incurred during production are quite large. Although the total costs incurred for Ship Production are quite large but the net profit or income earned by the factory is greater so that Ship Production can be said to be profitable and worthy of the effort. However, if there is an increase in interest rates (discount factor) of up to 18% per year, the NPV generated in Ship Production will be negative, amounting to Rp. 393,733,095.

Payback Period (PP)

The return of capital is quite fast because ship production has been producing in the 0th year so that at the beginning of the business it has obtained revenue that is used for the return of capital. In addition, Ship Production remains so that the income earned will remain stable. Considerable Ship Production Costs can still be covered by the receipts received by investors. The production of the vessels obtained is high enough that the acceptance received by investors is quite large. In addition, the marketing of Ship Production has the support of government policies. Investors do not need to spend money on marketing because the use of ship production products already has an advisory policy from the government so that it will be helped in the field of marketing locally, but for marketing up to the national level, several marketing methods are needed, both direct and online. After a feasibility analysis, ship production is declared profitable so that it states that ship production is financially feasible to be pursued.

Internal Rate Return (IRR)

The IRR value is much higher than the prevailing interest rate of 17.5%. This means that ship production is still profitable because it is greater than the credit

interest rate but is only able to achieve profits until the interest rate is below 17.5%.

Conclusion and Policy Recommendation
Conclusion.

Based on the discussion and analysis that has been carried out, it can be concluded that various things are as follows:

1. There is a positive correlation between the production of caught fish and the number of fishing boats and the number of fishermen. This means that the availability of fishing boats encourages people to actively become fishermen. So that the desire to catch fish affects the catch of fish.
2. The opportunity to sell boats in Bengkalis is very large considering that it is located in a water center area with community livelihoods as shrimp and fish fishermen so that boats, especially for fishermen,
3. CV Bengkalis Marine Fiber was chosen as the central business for the development of the shipping industry by considering aspects of conditions, potential support, and good financial and institutional analysis and has great potential to be developed to be even greater
4. CV Bengkalis Marine Fiber shipyard business from the aspect of employment and regulation is feasible in terms of labor supply and the absence of regulatory obstacles.
5. Financial and institutional analysis of CV Bengkalis Marine Fiber shows great potential to be developed and followed up by business actors with a positive NPV (net present value), IRR (internal rate of return) > bank interest, and a promising PP (Payback period).

Policy Recommendation

Recommendations that can be given by researchers to be followed up by both stakeholders and business owners and related industries and supporting agencies are as follows:

1. The seriousness of the government to coordinate and facilitate the main industrial elements (CV Bengkalis Marine Fiber) and the hook industry, the ability, and seriousness of members in the shipping industry and related, the ability to maintain the commitment of the industries involved, the establishment of ship IKM centers, then the existence of regulations and local government policies must support the existence of the people's ship industry.
2. The commitment to support of the members of the industry involved should be made based on common awareness and will so that there is no coercion according to common abilities and interests. Every element of the industry must be aware of the same interests, namely increasing the added value of the business involved.
3. Coordination is routinely necessary for the smooth implementation of the duties of each

industry and agency involved. Implementation needs to be done with the PDCA (Plan Do Check Act) cycle. This cycle includes Plan (planning for improvement), Do (Implementation of repairs), Check (monitoring repairs), and Act (evaluating improvements).

4. The need to increase support from the government to continue to trust ship procurement projects so that the shipyard business can continue to run, in addition, the shipyard entrepreneur's association can be formed as a group of shipyard entrepreneurs together with related industries so that in the process the business can run smoothly and be mutually beneficial.

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