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INNOVATION IN FIBERGLASS SHIP ASSEMBLY: SOCIAL-ECONOMIC AND ENTREPRENEURSHIP STUDY OF COASTAL COMMUNITIES

Inovasi Perakitan Kapal Berbahan Fiberglass: Kajian Sosial-Ekonomi dan Kewirausahaan Masyarakat Pesisir

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ABSTRACT

The problem of low performance of fishing communities in producing capture fisheries is generally related to the low quality of the capital ships used. This research aims to reveal the factors that caused the emergence of innovation in the business of assembling fiberglass fishing ships, the level of business development, and its impact on improving the socio-economic performance of fishing communities in rural areas. The research sample included small fishing communities and a group of fishermen who had built a business assembling fiberglass fishing ships in Bengkulu Selatan Regency. Because the data collected is mostly in the form of qualitative data, the analysis method used is a descriptive-qualitative method supported by statistical analysis methods. The results indicate that the emergence of innovation in assembling fiberglass fishing ships is driven by evidence highlighting the superior quality of fiberglass over wood in ship construction. The growth of the fiberglass ship assembly business is evident through its expanding market reach and increased sales turnover. Qualitatively, the study demonstrates that the innovation in assembling fiberglass ships has a positive impact on the socio-economic performance of fishermen, manifested through improved workability, heightened work motivation, and increased capture fisheries production. Three key recommendations emerge from the findings: (1) Stakeholders should consistently support the sustainability of fiberglass ship assembly businesses; (2) Relevant agencies are

encouraged to actively contribute to the substantial development of the fiberglass ship assembly sector; and (3) Fishing communities greatly benefit from socialization, empowerment, literacy, and education programs.

Keywords: fiberglass fishing ship, fishing communities, innovation, socio-economic performance

ABSTRAK

Permasalahan rendahnya kinerja masyarakat nelayan dalam menghasilkan perikanan tangkap pada umumnya berkaitan dengan rendahnya kualitas modal kapal yang digunakan. Penelitian ini bertujuan untuk mengungkap faktor-faktor penyebab munculnya inovasi pada usaha perakitan kapal perikanan fiberglass, tingkat perkembangan usaha, dan dampaknya terhadap peningkatan kinerja sosial ekonomi masyarakat nelayan di pedesaan. Sampel penelitiannya adalah masyarakat nelayan kecil dan kelompok nelayan yang membangun usaha perakitan kapal nelayan fiberglass di Kabupaten Bengkulu Selatan. Karena data yang dikumpulkan sebagian besar berupa data kualitatif, maka metode analisis yang digunakan adalah metode deskriptif-kualitatif yang didukung dengan metode analisis statistik. Hasil penelitian menunjukkan bahwa munculnya inovasi perakitan kapal penangkap ikan fiberglass didorong oleh bukti yang menunjukkan keunggulan kualitas bahan fiberglass dibandingkan kayu dalam konstruksi perkapalan. Pertumbuhan bisnis perakitan kapal fiberglass terlihat dari jangkauan pasar yang semakin luas dan omzet penjualan yang meningkat. Secara kualitatif, studi ini menunjukkan bahwa inovasi perakitan kapal fiberglass berdampak positif terhadap kinerja sosial ekonomi nelayan, yang diwujudkan melalui peningkatan kemampuan kerja, peningkatan motivasi kerja, dan peningkatan produksi perikanan tangkap. Tiga saran penting yang dapat disampaikan adalah: (1) Pemangku kepentingan harus mendukung keberadaan usaha perakitan kapal fiberglass secara konsisten; (2) Iinstansi terkait diharapkan dapat membantu dalam pengembangan usaha perakitan kapal fiberglass secara serius; dan (3) Masyarakat nelayan akan memperoleh manfaat yang lebih besar jika program sosialisasi, pemberdayaan, literasi, dan edukasi lebih banyak dilakukan secara intensif.

Kata Kunci: kapal nelayan fiberglass, masyarakat nelayan, inovasi, kinerja sosial-ekonomi

INTRODUCTION

Bengkulu Selatan Regency is one of the regencies that have the problem of low capacity in managing marine natural resources (capture fisheries). This phenomenon is proven by the existing data (shown in Table 1), which shows that the production performance of capture fisheries is on average ranked at the lowest compared to other regencies in the Bengkulu Province region. The low performance of the fishing community is empirically demonstrated through the use of fishing boats which are generally of low qualification (generally the fishing

community in Bengkulu Selatan are small-scale fishermen). The problem of low capacity in managing marine natural resources (capture fisheries) of fishing communities in Bengkulu Selatan Regency is contextually strengthened by theoretical studies that explain that for every economic activity that uses low-quality working and social capital, the results obtained are low economic performance (contextually, it indicates that there is a causal relationship between the variable quality of working capital and the quality of the economic performance produced) (Singh et al., 2022).

Table 1. Capture Fisheries Production by Coastal-Based Regencies in Bengkulu Province (2019 - 2021)

Regencies	Total Production of Capture Fisheries (in Tons)			
	2019	2020	2021	Average
Bengkulu Selatan	1,968	1,882	2,445	1,925
Bengkulu Utara	5,467	5,529	5,913	5,498
Kaur	4,124	8,419	4,765	6,271
Seluma	2,143	7,432	2,537	4,787
Muko-muko	20.277	6,190	18,632	13,233
Bengkulu Tengah	1,603	3,230	1,728	2,.416
Total	35,582	32,682	36,020	34,100

Source*:* (Marine and Fisheries Service) Bengkulu Province (2022)

Economic development of fishing communities based on innovative efforts to assemble fishing boats made from fiberglass (as a substitute for boats made from wood) is a form of entrepreneurial development in the field of capture fisheries technology which is considered appropriate to improve the low capacity of fishing communities in optimizing the management of marine natural resources, especially in Bengkulu Selatan Regency. In the context of entrepreneurship theory explained that a person's entrepreneurial competence will determine the success of the business performance they run. Strengthened by the background characteristics of fishing communities which are one of the most important elements of stakeholders, the entrepreneurial role of fishing communities should be considered as a very strategic capital in achieving optimal marine natural resource management performance. However, the empirical reality shows different results, where the results of the performance of marine natural resource management in Bengkulu Selatan Regency, in general, have not yet reached the optimal point as expected (Dewi, 2018); (Susetyo et al., 2018).

According to several previous studies, the background to innovation in making fiberglass boats could be based on several weaknesses that wooden boats have, such as being vulnerable to brittleness and leaking; On the other hand, boats made from fiberglass are more leak-resistant, the life or service life of the

boat is longer, maintenance is much easier, and the manufacturing costs are cheaper (Mubarak, 2022). Corroborated by the results of other research, it is shown that with its high durability and high resistance to water, this fiberglass material is considered very suitable to be used as a supporting material for ship hull coatings. Fiberglass is the main material that is often used in various production fields in an industry (for example, used by the shipping industry). Judging from the economic advantages (cost efficiency), the important urgency of this fiberglass-based ship is seen from its ability to increase its product offerings based on increasing market demand, especially demand from small fishing communities. Another economic advantage (especially in the form of entrepreneurship) is the advantage seen from the impact of fiberglass boat innovation on improving performance through increasing the workability of fishermen (Kliangkhlao et al., 2022; Apriliani et al., 2020; Suardi, 2018).

Another theory showed that whether a person's work ability is strong or not is always positively correlated with the level of performance produced. On the other hand, it was shown that the strength of working capacity is largely determined by the strength or quality of supporting working capital. This interactive phenomenon was detected due to workability factor (one aspect of reflecting the strength of the entrepreneurial spirit) which were still low. Associated with the condition of coastal communities (fishermen), one of the most important forms of working capital is the capital of ships to catch fish. The higher the quality of fishing vessel capital used, indicates the higher the quality of fishermen's working ability and indirectly the higher the performance. Empirically, this positive relationship between the quality of working capital, working ability, and fishermen's performance does not always occur. The case that occurred in Bengkulu Selatan Regency indicates that the performance of marine fisheries production is still relatively low when compared to other coastal-based regencies such as Kaur, Seluma, Bengkulu Tengah, Bengkulu Utara, and Muko-muko Regencies (as shown in Table 1.) (Rezaei & Ortt, 2018; Sharma & Taneja, 2018; Gutiérrez-Cobo et al., 2017).

RESEARCH METHOD

Population, Location, and Sampling Method

The research population came from coastal communities who work as fishermen and live in the coastal area of Bengkulu Selatan Regency, Bengkulu Province. Samples were taken from part of the population consisting of small-scale fishing communities domiciled in Manna District, Bengkulu Selatan Regency. The research sample was divided into two parts: (1) a small-scale fishing community (traditional fishermen) who served as respondents, which numbered 70 fishermen and (2) a group of fishing communities who are directly involved in the business activities of manufacturing (assembling) fishing

boats/ships made from "fiberglass" (consisting of 7 fishermen). For the first sample, the sampling was carried out by simple random sampling method; while for the second sample, the sampling was carried out by purposive sampling method.

Data Types and Data Collection Method

Primary data is used as the main data in this research, while secondary data is used as supporting data. Primary data was collected through interviews, questionnaires, and observation methods. The interview method was carried out with 5 fishing community leaders (including one manager of a fiberglass shipbuilder). The questionnaire method was carried out by distributing questionnaires to 70 small-scale fishermen in the coastal area of Manna District, Bengkulu Selatan Regency. The observation method was carried out on research objects related to the process of making (assembling) fishing ships made from fiberglass by a group of related fishermen.

Research Hypothesis

Based on theory and several previous research results, two research hypotheses can be put forward as follows: (1) There is a positive and significant relationship or correlation between fishermen's economic performance (catch fishery production results) and fishermen's workability; and (2) There is a positive and significant relationship or correlation between fishermen's economic performance (catch fishery production results) and fishermen's work motivation.

Analysis Method

Some of the primary data collected is in the form of qualitative data (derived from observations, interviews, and discussions with business managers assembling fiberglass fishing boats). The observation referred to here is to carefully observe the process of making fiberglass boats by a team of fishermen who are also fiberglass boat entrepreneurs. The quantitative data collected came from the answers of 70 fishermen respondents based on questionnaires distributed, where all respondents were selected based on a simple random sampling method from all small fishermen in Manna District, Bengkulu Selatan Regency. The next step is to analyze all the data collected using descriptive-qualitative analysis methods, which previously carried out correlation analysis using statistical methods (Pearson Correlation Analysis). The Pearson Correlation statistical method aims to analyze the relationship between capture fisheries production (as an indicator of fishermen's economic performance variable/Y) with workability (as an indicator of the first social performance

variable/X1) and work motivation (as an indicator of the second social performance variable/X2).

The descriptive-qualitative analysis method was carried out through discussions with a team of entrepreneurial fishermen who made fiberglass boats. This discussion is intended to find answers to the overall research objectives, which include revealing the factors that are the causes or reasons for the emergence of innovation in the fiberglass fishing boat assembly business, the level of business development, and the impact on improving the economic performance of fishing communities in rural areas of Bengkulu Selatan Regency. The descriptive analysis process for both quantitative data and qualitative data is carried out through 3 stages, namely the data reduction stage, the data display stage, and the conclusion drawing stage (Moser & Korstjens, 2018; Yang et al., 2021).

RESULT AND DISCUSSION

General Description of Research Location and Respondent Characteristics

Bengkulu Selatan Regency is one of the 9 districts in Bengkulu Province, where the area is mostly coastal. Observation results show that coastal communities in Bengkulu Selatan Regency who work as fishermen especially in the Manna District, generally still use simple capital boats (only a few use fiberglass boats). This is what causes the economic performance (in the form of fish catches from the sea) of fishing communities in Bengkulu Selatan Regency to remain relatively low (see Table 1). The results of the research also found a portrait of entrepreneurship growing from a group of fishing communities (respondent group) who succeeded in creating an innovative entrepreneurial group that makes fiberglass fishing boats. The respondent group (entrepreneurial group) of fiberglass boat builders consisted of 7 people, each of whom worked together and worked hand in hand in the boat-building process from the preparatory stage to the final/finishing stage (explained in Figure 1).

Factors Causing the Emergence of Fiberglass Fishing Ship Assembly Innovations: Qualitative Analysis

Through in-depth interviews with fiberglass ship assembly managers (as key informants), information data was obtained showing that the assembly of fishing ships made from fiberglass is an innovative change from the fishing ships used by small fishermen made from wood. From the interview results, it was also revealed that these wooden fishing boats are closely related to natural forest resources whose stocks are increasingly depleting or approaching a critical point. The need for basic materials for fishing ships made from wood greatly influences the sustainability of the existence of natural forest resources. Even though it is renewable, the impact of the increase in wood prices is felt by wooden

shipbuilders in general. Based on the reasons for maintaining the sustainability of natural forest resources, conservation reasons, and a strong desire to build and develop a business assembling fishing ships made from fiberglass, this is one of the main causes for the emergence of innovation in the transformation of fishing ships made from wood into fishing ships made from fiberglass (Pardi & Afriantoni, 2017; Ardhy et al., 2019; Popelo et al., 2021).

Another factor that causes or is behind the emergence of innovation in assembling fishing ships made from fiberglass is the technical weakness of ships made from wood. The results of observations and interviews with small fishermen/traditional fishermen revealed that fishing vessels made of wood had many drawbacks, including (1) the wood material was not very resistant to water (prone to leaks), (2) the order took quite a long time, (3) the price of the boat relatively high due to the increasing scarcity of wood material which is good and suitable for use as a raw material for good and strong ships, and (4) the way to treat it is more complicated and one has to be careful. The scarcity of wood for the basic material of this ship is related to the depletion of forest natural resources due to the increasing behavior of "illegal logging" and the lack of efforts to empower local wisdom in maintaining the existence of forest natural resources in a sustainable manner. Strengthened by a feasibility study on the use of fiberglass materials in the manufacture of fishing vessels, a strategy has been found in the development of agro-industry assembling fishing vessels made of fiberglass in anticipation of the development of wood-based materials that are dwindling and the price is increasingly expensive (Henri et al., 2018; Permana & Supomo, 2018; Pambudi et al., 2021).

Socio-economic and Entrepreneurial Analysis of the Development of Fishing Ship Assembly Businesses Made from Fiberglass

Through direct observations and interviews in the field, important information was obtained about the process of making/assembling fiberglass ships using the FRP (Fiberglass Reinforced Plastic/Polyster) method:

1. The initial stage is the preparatory stage for shipbuilding, which includes the preparation of the required materials, preparation for the manufacture of the ship hull frame, and others. The results of interviews with the managers of the manufacturing industry (ship assembly) showed that the raw material for fiberglass consists of resin (polyester resin and epoxy resin), initiator/catalyst, glass fiber, gel coat, and other complementary materials; purchased from the island of Java, while other supporting materials were purchased in Bengkulu.
2. The second stage is the stage that is focused on the process of making the hull frame. The results of interviews with shipbuilders show that this second stage is the most crucial and most decisive stage, where the quality of the ship hull fabrication will determine the next fabrication stages.

3. The third stage is focused on the process of making the hull as a whole. The results of the information from the key informants indicate that this third stage is the refinement stage of the second stage, meaning that it is the stage of making the complete hull and at the same time perfecting the deficiencies that occur in the second stage. For example, if in the second stage, there is a slight crack in the ship's hull, then complete repair actions are immediately carried out in the third stage before proceeding to the next stages. The third stage is focused on the process of making the hull as a whole. The results of the information from the key informants indicate that this third stage is the refinement stage of the second stage, meaning that it is the stage of making the complete hull and at the same time perfecting the deficiencies that occur in the second stage. For example, if in the second stage, there is a slight crack in the ship's hull, then complete repair actions are immediately carried out in the third stage before proceeding to the next stages.
4. The fourth stage is focused on the process of adding ship body accessories. In this fourth stage, the installation of accessories is carried out in accordance with the order in terms of the shape and type of accessories ordered. The materials used as additional accessories are generally made from wood and other materials as supports. For example, in making sitting chairs for fishermen (most of which are still made from wood), installing lighting accessories for illuminating ships, etc. The inclusion of wood as body support and ship accessories indicates an indirect relationship with the environment, namely the use of natural wood/forest resources which is conservative, not depletive.
5. The fifth stage is focused on the ship painting process. As with the installation of accessories, the ship's painting stage is carried out according to the order, which includes the color, quality of the paint, and the writings to be written on the ship.
6. The sixth stage is focused on the final process or finishing of the shipbuilding process, where the process is carried out carefully and thoroughly.

In the entrepreneurial analysis (innovation of capital transformation of ships from wood to fiberglass), the steps in the process of manufacturing (assembling) fishing boats made from fiberglass based on the FRP (Fiberglass Reinforced Plastic/Polyester) method are explained in detail in Figure 1 (Putra et al., 2022; Pardi & Afriantoni, 2017; Ardhy et al., 2019).

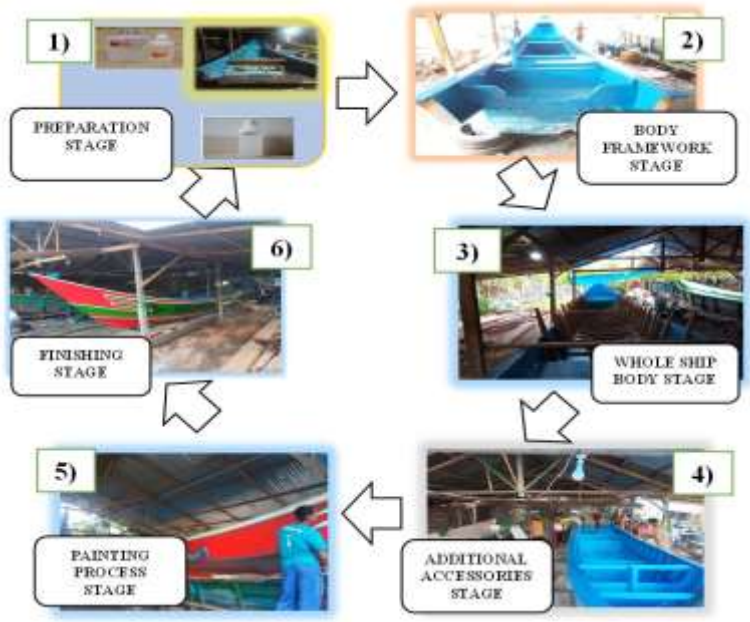

Figure 1.
The Six Stages of the Assembling Process of Fishing Ships Made from "Fiberglass" by FRP Method

The Impact of Manufacturing/Assembling Fiberglass Fishing Ships on Fishermen's Socio-economic Performance: Quantitative-Qualitative Analysis

The impact of using fiberglass fishing boats (a reflection of the increase in working capital for the boat) can be seen in the increase in fishermen's workability in the form of increased economic performance in the form of increased fish catches at sea. The results of interviews with fishermen who use fiberglass boats show that by using fiberglass boats, they feel that their work motivation and morale are higher than before. In this context, a small fisherman who had replaced his boat with a fiberglass boat said: "I feel my self-confidence is higher because I have used a fiberglass boat which I consider safer and stronger, so I am more motivated to work longer to earn the catch of sea fish is much greater".

However, because there are relatively few fishermen who use fiberglass boats, the impact on improving the economic performance of fishermen is not very visible (in Table 1., it can be seen that capture fisheries production as an economic performance of the fishing community of Bengkulu Selatan Regency is still relatively low when compared with 5 other districts that have the same coastal character). This contradictory condition in the field is confirmed by the results of an interview with one of the small fishermen who still uses a wooden boat, who said: "I'm still hesitant, so I haven't replaced my wooden boat with a

fiberglass boat. My catch of fish at sea is usually unstable, especially when storm season comes... I often don't catch any fish at all".

Theoretically, it can be explained that between social performance (fishermen's workability) and fishermen's economic performance, there has been a positive correlation. This positive correlation or relationship means that if workability is improved (in the context of research carried out through improving the quality of working capital for fishing boats in the form of fiberglass boats), then positively the fishermen's economic performance (fish production/catch at sea) will also increase. This relationship is supported by another factor whose role is quite important, namely the high level of work motivation which is intrinsically found in the fishermen themselves. This is confirmed by research results which explain that increasing fishermen's work motivation cannot be separated from improving fishermen's better behavior or healthier behavior. It is said that the economic conditions of coastal communities/fishermen (reflected by the economic performance of coastal communities/fishermen) are closely related or cannot be separated from the geographical-ecological quality conditions of coastal areas which shape the characteristics of the community (as a proxy for social performance) (Jaya & Sumarni, 2020; Wijsman et al., 2019; Sekarningrum & Yunita, 2019).

In qualitative analysis, social performance has been shown through the form of entrepreneurship owned by fishing communities. The results of the observations showed that the fishing community in Manna District, Bengkulu Selatan Regency has formed an entrepreneurial group whose profession is as a maker of fiberglass fishing boats. As a form of entrepreneurial group, this innovation in making fiberglass boats has had an impact on the social and economic performance of the surrounding fishing communities. The research results showed that the increase in social performance is demonstrated by the increasing motivation of the community to replace wooden boats with fiberglass boats, with the hope of improving their economic performance in the form of increasing fish catches at sea. This alternative cooperative business model is strengthened by the results of research by Kusumasari (2016), which explains that 4 alternative forms of entrepreneurial business models have generally been developed in Indonesia, namely mixed entrepreneurial business models, sharia entrepreneurial business models, voluntary entrepreneurial business models, and business models. cooperative entrepreneurship.

Quantitatively, the results of empirical research (as a result of testing two research hypotheses) on 70 small-scale fishermen respondents in Manna District, Bengkulu Selatan Regency, which were carried out using the Pearson Correlation Test between the economic performance variable and two social performance variables (workability/working capital capacity variable and work motivation variable) are shown in detail in Table 2.

Table 2. Analysis Result of Pearson Correlation Test among Capture Fisheries

Correlation Between	Value	Sig. (1-tailed)
The Economic Performance Variable and the First Social Performance Variable (workability/working capital capabilities)	.552	.000
The Economic Performance Variable and the Second Social Performance Variable (fishermen's work motivation)	.302	.006
N of Valid Cases	70	70

Source: Research Results (processed), 2023

Table 2. shows a significant positive correlation between economic performance (capture fisheries production) and social performance (workability/working capital capabilities and fishermen's work motivation). The results of this quantitative analysis implicitly indicate that efforts to increase fishermen's working capital capabilities and work motivation are a very important and very strategic effort because it will have an impact on improving the economic performance of fishermen. The results of this quantitative analysis also provide important implications for improving the working capacity of fishermen, especially small-scale fishermen (traditional fishermen) through increasing the working capital capability in the form of fishing vessels made from wood base fiberglass and the importance of improving work motivation. This is confirmed by the results of other research which shows that the relationship between three factors, namely economic performance, workability (working capital capacity), and work motivation does not always occur in every region. This is due to differences in regional character, the character of the fishing community, and differences in the conditions of economic activities that occur. Apart from that, in fishing communities, there are always differences in characteristics based on clusters or groups, where those who are in the traditional fisherman/small fisher cluster always have differences with fishermen who are in the large fisherman cluster (Rezaei & Ortt, 2018), (Sharma & Taneja, 2018), (Gutiérrez-Cobo et al., 2017).

Empirical results through interviews with fishermen who use fiberglass boats, it is known that by using new boats (fiberglass boats), their enthusiasm and motivation for going to sea are higher. This is also because the work capacity to catch fish at sea is increasing, which has an impact on the economic performance of fishermen in the form of greater capture fisheries production. However, from the results of interviews with fishing figures, different results (a phenomenon) were shown, where empirically it appeared that there was a reality which showed that the fishing community there were still not many who replaced the old fishing boats (made of wood) with new fishing boats (made from fiberglass). The results of the critical analysis concluded that there are not many fiberglass boat users in Bengkulu Selatan Regency due to three factors,

namely: (1) the purchasing power of small-scale fishing communities on average is still low, resulting in an inability to buy fiberglass boats; (2) many traditional fishing communities still doubt the advantages of fiberglass boats; and (3) there has not been intensive socialization, especially from the relevant agencies, regarding the advantages of this fiberglass-based fishing boat.

Studying several empirical observation results which produce contradictory phenomena as previously revealed, indicates that there is a phenomenon of still low quality of social capital within the fishing community in Bengkulu Selatan Regency, such as a low sense of togetherness and cooperation both within groups and between groups. However, looking at other social aspects (entrepreneurial aspects), the results of empirical research have found positive and prospective phenomena such as innovative work behavior, the need for achievement, and the courage to bear risks, as reflected in the emergence of the fiberglass shipbuilding business groups in Manna District, Bengkulu Selatan Regency. There are 2 important implications resulting from the emergence of an entrepreneurial spirit in this fishing community, including: (1) if this entrepreneurial spirit is empowered consistently, then gradually (due to the trickle-down effect) in the future it will become a form of entrepreneurship that can be developed into a large-scale fiberglass fishing boat industry; and (2) demanding market research (about the interaction between the supply side and the demand side) seriously and consistently (Kliangkhlao et al., 2022; Grymak, 2018).

CONCLUSION AND SUGGESTION

Conclusion

The factors causing the emergence of innovation in the business of assembling/manufacturing fishing boats from fiberglass include: (1) Fishing boats that were previously made of wood have proven to be damaged more quickly/brittle quickly and their quality is far below that of boats made from fiberglass. , which is made using the FRP method, (2) The price of wood raw materials is increasingly expensive due to the depletion of natural forest resource reserves, and (3) The superiority of fiberglass boats in terms of material quality, durability, etc. The development or success of this fiberglass boat assembly business is shown by the increasingly wider market reach, where the area is not only in South Bengkulu Regency, but has reached several other districts such as Kaur, Seluma, North Bengkulu, and Muko-muko Regencies. The impact of technological innovation in assembling/making boats from fiberglass on the socio-economic performance of fishermen is shown by increasing the socio-economic performance of fishermen in the form of increased workability (such as the ability to fish further), work motivation (such as longer working hours fishing), and a significant increase in production of capture fisheries (such as the

consequences of catching more fish). Two important implications that can be considered are (1) the importance of consistently empowering entrepreneurship and (2) the demand for market research (about the interaction between the supply side and the demand side) seriously and consistently

Suggestion

In light of the findings, three strategic recommendations emerge to enhance the impact of the research outcomes: (1) Intensify and sustain support from various stakeholders such as the government and investors for the continued innovation in assembling/manufacturing fiberglass fishing ships. This support should be serious, consistent, and aligned with the long-term goals of fostering economic growth in the fishing industry; (2) Encourage collaboration among relevant agencies, particularly the Maritime Affairs and Fisheries Service and other associated entities, to actively support and facilitate the evolution of fiberglass ship manufacturing businesses. Aim towards the establishment of an integrated agro-industry focused on fiberglass shipping, fostering a comprehensive approach to industry development; and (3) Recognize the substantial positive impact on the socio-economic performance of fishing communities resulting from the adoption of fiberglass ship innovation. To maximize and sustain these benefits, there is a need for continuous improvement through ongoing and robust socialization, empowerment, literacy, and education programs. Ensuring the consistent implementation of these programs will contribute to the long-term success of the fishing communities and their economic ventures.

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