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Strategy for Developing the Potential of Coastal Women in Tegal Regency, Central Java.

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ABSTRACT

The research investigates the potential of female human resources in coastal areas of Tegal Regency, Indonesia, with a focus on their contribution to enhancing community welfare and alleviating poverty. The study's principal findings include: 1. Demographic profile: The majority of respondents were women of productive age engaged in fish marketing and processing. 2. Educational attainment: A generally low level of education was observed, with 52% of respondents having completed only elementary school. 3. Cultural practices: Religious studies and sea alms rituals were the most widely maintained traditions. 4. Community engagement: Activities were predominantly centered around mosques. 5. Social dynamics: The rarity of regional conflicts suggests a conducive social atmosphere. 6. Community infrastructure: Posyandu (integrated health service posts) were the most prevalent community institutions. 7. Healthcare utilization: Health centers served as the primary facilities for medical treatment. 8. Water consumption: The majority of residents purchased clean water for drinking purposes. A financial analysis of fish processing and marketing enterprises yielded the following results: Total investment: IDR 82,904,314; Annual profit: IDR 33,561,448; R/C ratio: 1.29 (profitable); NPV: IDR 181,338,526/unit in 10 years (feasible), IRR: 60% (feasible) Payback period: 2 years 8 months 22 days.

Keywords: Community welfare, fish marketing, financial analysis, Tegal Regency

1. Introduction

Tegal Regency has a coastline located in three administrative areas of sub-districts, namely Kramat, Suradadi and Warureja. The coastal area causes the livelihood of the surrounding community to become fishermen. Fishermen on the coast of Tegal Regency are small-scale fishermen whose income is used to meet daily needs. The economy of small-scale fishermen is still relatively poor because of the lifestyle that is common in coastal communities. This is because the source of family income only depends on one person or on the head of the family who works as a fisherman. However, coastal women's resources can be developed to improve the welfare of coastal communities.

Coastal women in Tegal Regency consist of housewives, fish processors, fish marketers, entrepreneurs and so on. The development of human resources needs to be improved so that it can have an impact on improving the economy of coastal communities. Natural resources on the coast need to be utilized with qualified human resources. This is because the available natural resources can be utilized optimally and sustainably. The development of human resources in coastal women needs to be considered to improve community welfare and reduce poverty rates that are always associated with coastal communities.

Based on these conditions, a study is needed to determine the potential of human resources from coastal women on the coast of Tegal Regency. The study was conducted as a consideration in developing existing potential so that it can improve the welfare of coastal communities. The study was carried out by the Tegal Regency Fisheries Service Team with locations in Kramat, Suradadi and Warureja Districts in September 2024. The results of the study are expected to be used as a recommendation for the local government in developing coastal women's businesses in Tegal Regency.

2. Research Method

2.1 Sampling Method

The method used in this study is a quantitative descriptive method with a sampling method, namely purposive sampling. The purposive sampling method is a sampling method by providing certain criteria as sampling objects. The criteria used are coastal women or communities with female gender who live on the coast of Tegal Regency. According to Sugiyono (2014), Purposive sampling is a sampling technique with a certain balance, meaning that each subject whose information is used is deliberately selected based on certain goals and considerations.

The sampling method used is accidental sampling with convenience sampling. This method is a sampling method with samples used are samples found accidentally but in accordance with the specified criteria. While the convenience sampling method is a sampling with a minimum of 30 samples. The sample obtained in the study was 33 respondents with the criteria, namely coastal women including fishermen's wives, fish processors, fish marketers, and so on.

2.2 Analysis Method

The analysis methods used include NPV, R/C Ratio, IRR, Payback Period, and SWOT matrix (Riyadi & Wijayanto, 2012); (Kartikasari, 2021); (Yusuf & Muhartono, 2018); (Thakur & Metha, 2014). The formula used is as follows:

a. Net Present Value (NPV)

$$NPV = \sum_{t=1}^n \frac{CF_t}{(1+K)^t} - I_o \quad (1)$$

Where:

NPV : net present value (Rp)

CF_t : cash flow per year in period t

I_o : initial investment value in year 0 (Rp)

K : interest rate or discount rate (%)

b. Revenue Cost Ratio (R/C Ratio)

$$R/C \text{ Ratio} = \frac{TR}{TC} \quad (2)$$

Where:

TR: Total Income (Rp/Kg/trip)

TC: Total Cost (Rp/trip)

c. Internal Rate of Return (IRR)

$$IRR = LDR + D \left(\frac{NPV \text{ LDR}}{|NPV \text{ HDR}| + NPV \text{ LDR}} \right) \quad (3)$$

Where:

LDR : lower discount rate

HDR : high discount rate

NPV HDR: NPV calculated using higher discount rate

NPV LDR : NPV calculated using lower discount rate

D : difference between LDR and HDR

d. Payback Period (PP)

$$pp = n + \left[\frac{(a-b)}{(c-b)} \times 1 \text{ tahun} \right]$$

Where:

n: the last year where the amount of cash flow still cannot cover the original investment

a: the amount of original investment

b: cumulative amount of cash flow in year n

c: cumulative amount of cash flow in year n+1

e. SWOT

I E	Strengthen (S)	Weakness (W)
	Opportunity (O)	Threat (T)
	SO Strategy A strategy that aims to maximize strengths to take advantage of opportunities	WO Strategy A strategy that aims to minimize weaknesses to take advantage of opportunities.
	ST Strategy A strategy that aims to utilize existing strengths to overcome threats.	WT Strategy A strategy that aims to minimize weaknesses and avoid threats.

3. Result and Discussion

3.1 Respondent Profile

Respondents in this study refer to women on the coast of Tegal Regency which includes Kramat, Suradadi, and Warureja Districts. Based on the study that has been carried out, the respondent profile is known as follows.

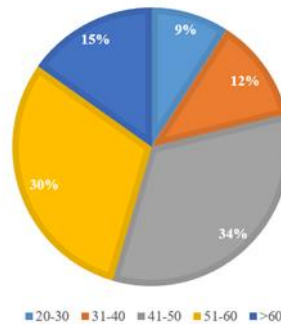


Fig. 1 - Distribution of Respondents' Age.

Based on the graph of the distribution of the respondents' ages, it is known that the respondents in this study are included in the productive category. The distribution of the respondents' ages with the largest number in this study are respondents aged 41 to 50 years, which is 34%. While the respondents' ages with the smallest number are respondents aged 20 to 30 years, which is 9%. This shows that the age of respondents who are coastal women is a productive age that is still classified as an active workforce.

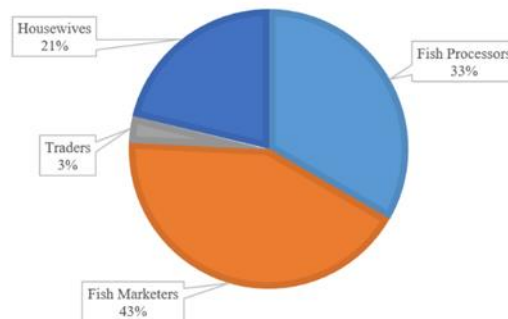


Fig. 2 - Distribution of Respondents' Professions.

Based on Figure 2, it is known that the distribution of the professions of respondents who are coastal women includes housewives, traders, fish marketers and fish processors. The largest type of respondent profession is fish marketers with a percentage of 43%. While the smallest respondent profession is traders with a percentage of 3%. The profession with the largest number is due to the socio-economic conditions of the existing coastal communities. This causes women in coastal areas to mostly work as fish marketers and processors because of the easy availability of raw materials.

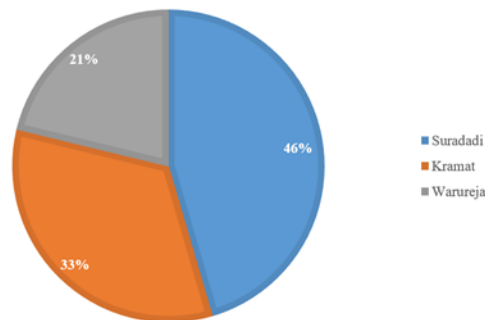


Fig. 3 - Distribution of Respondent Locations.

Based on Figure 3, it is known that the distribution of respondents' locations in this study consists of three sub-districts, namely Kramat, Suradadi, and Warureja. The largest distribution of locations is Suradadi Sub-district at 46% and the lowest is Warureja Sub-district at 21%. Respondents in Suradadi and Warureja Sub-districts are dominated by fish processors and marketers who live on the coast of the district.

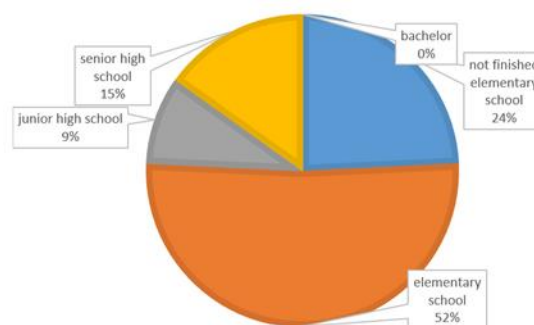


Fig. 4 - Respondents Education.

According to Figure 4, it can be seen that the education of coastal women in Tegal Regency is the largest, namely elementary school graduates of 52%. While the number of coastal women's last education is bachelor, which is 0% or none. Based on the results of the field survey, it can be concluded that the level of education of coastal women is still low and needs to be improved. The causes of these problems can be influenced by social, economic and cultural factors so that they form a community environment.

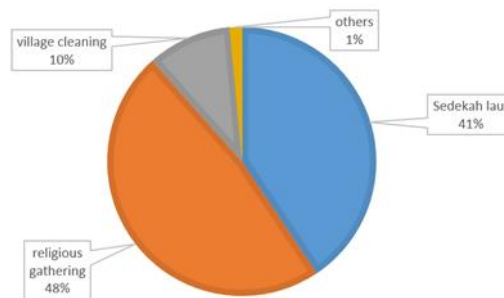


Fig. 5 - Traditions that are still preserved.

Traditions that are still preserved on the coast of Tegal Regency include village cleaning, sea alms, religious studies, and so on. The religious gathering have the largest percentage, which is 48%, because the social and religious conditions in the area are uniform, making this tradition still preserved. Furthermore, the tradition that has the next largest percentage is sea alms with a percentage of 41%. This is due to geographical factors in the area that affect the social conditions of the community in it, namely the coastal area which is identical to the sea.

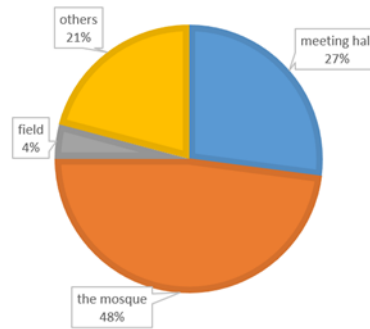


Fig. 6 - Location of Community Activity Concentration.

Based on the traditions that are still preserved by coastal communities in Tegal Regency, it is known that the location of the concentration of community activities is also influenced by this. Interviews that have been conducted with respondents show that the mosque is the location of the concentration of activities with a percentage of 48%. In addition, other locations of concentration of activities include village halls, fields, residents' houses, and so on. According to this information, it can help in designing activities that will involve coastal communities, especially women.

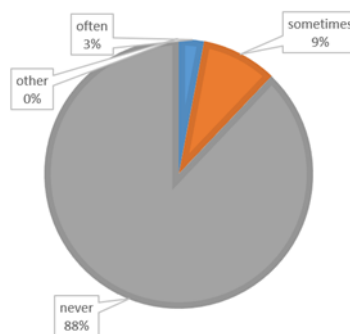


Fig. 7 - Regional Conflict Intensity.

The intensity of regional conflict in Figure 7 shows that conflicts that occur in the region are almost never with a percentage of 88%. While respondents who answered that conflicts often occur are 3%. Based on this information, it is known that environmental conditions in the region are classified as conducive so that the community is also comfortable to carry out community activities.

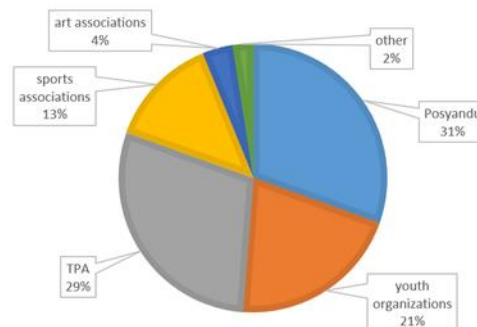


Fig. 8 - Developing Community Institutions.

Community institutions that are developing in the coastal areas of Tegal Regency based on Figure 8. with the largest percentage is Posyandu at 31%. Then other types of community institutions are youth organizations, TPA, sports associations, art associations and so on. This information will also be useful for planning human resource development in coastal areas, such as being able to conduct counseling by aligning with the developing community institutions.

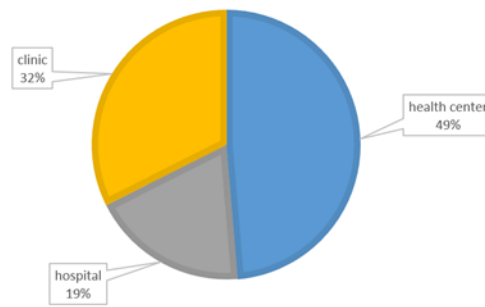


Fig. 9 - Respondents Place of Treatment.

Based on the results of the interviews that have been conducted, it is known that the place of treatment for respondents who are coastal women in Tegal Regency (Figure 9.). The percentage for the largest place of treatment is the health center at 49%, while the lowest percentage is the hospital at 19%. This is because the health center is a health facility that is easily accessible and cheap or even free.

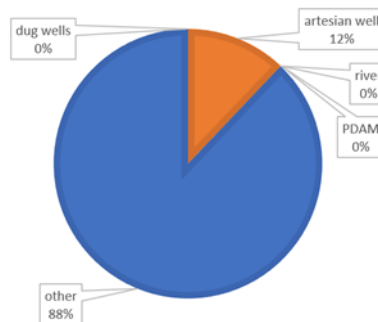


Fig. 10 - Drinking Water Sources.

Based on Figure 10. it is known that there are no coastal communities that use dug wells, rivers or PDAM as a source of drinking water. As with PDAM, in the coastal area it cannot be reached by PDAM, so the largest percentage is that people buy clean water for drinking with a percentage of 88%. Clean water purchased by coastal communities is water at a price of Rp 4,000,-/jerrycan.

3.2 Feasibility of Coastal Women's Business

Based on the profile of respondents who are coastal women in Tegal Regency, it can be seen that the distribution of respondents' professions includes traders, marketers, housewives and so on. According to the distribution of professions, a feasibility analysis of businesses carried out by coastal women in Tegal Regency can be carried out. A business can be said to be feasible or to be known by several aspects, namely capital, costs, income and profits. The analysis of the level of feasibility in the crab fishing business uses the following assumptions:

1. The 10-year projected age is adjusted to the economic life of the investment goods used in the fishing trap business activities;
2. The capital used is own capital and credit from banks or others;
3. The first year of the fishing trap business was operational in the fourth month so that the income in the first year was not full but only 9 months;
4. There is 3% growth annually (inflation) in revenue, capital/investment and total costs.

Table 1 - Financial Analysis of Fish Processing and Marketing Business on the Coast of Tegal Regency.

Description	Average per Business Unit
Investment Capital (Rp)	
a. Land	26,720,000
b. Building	42,266,667
c. Vehicle	13,917,647
d. Freezer	1,335,000
e. Processing Tools	1,070,398
Total Capital (Rp)	82,904,314

Description	Average per Business Unit
Fixed Cost (Rp/Year)	
a. Maintenance	660,000
b. Depreciation	7,825,083
c. Retribution	878,400
Total Fixed Cost (Rp/Year)	9,363,483
Variable Costs (Rp/Year)	
a. Cost of Capital	49,288,846
b. Non-Capital Operating Costs	44,210,167
Total Variable Costs (Rp/Year)	93,499,013
Total Cost (Rp/Year)	102,862,496
Income (Rp/Year)	136,523,077
Profit (Rp/Year)	33,561,448
R/C Ratio	1.29
NPV (Rp/10 Years)	181,338,526
IRR (df 7%)	60%
Payback Period (Year)	2.72

Based on the financial analysis table, it is known that the investment value of the fishery processing and marketing business on the coast of Tegal Regency is IDR 82,904,314, - which consists of business land, buildings, vehicles, freezers and processing equipment. Fixed costs incurred in the business are IDR 9,363,483, - / year which includes maintenance costs, depreciation and levies. While for variable costs consist of capital expenditures and non-capital operating costs with a total of IDR 93,449,013, - / year. Income within a period of one year in the business is IDR 136,523,077, - with a profit value per year of IDR 33,561,448, - so that the profit per month is IDR 2,805,048, -.

The R/C ratio value in the fish processing and marketing business is 1.29, which indicates that the business is feasible or profitable. This is indicated by the R/C ratio value of more than one (>1). The R/C ratio itself is a ratio or comparison of the total income and costs obtained from the crab fishing business. Based on the R/C ratio value of more than one, the crab fishing business is feasible to continue. According to Afriani et al. (2023), if the $R/C \text{ ratio} > 1$, the income received is greater than the costs incurred so that it can be ascertained that the business being run is profitable and feasible to continue.

The NPV value of the fish processing and marketing business in Tegal Regency is IDR 181,338,526/unit in 10 years, which means that the projection in 10 years the business carried out can produce a value of IDR 181,338,526/unit. This shows that the business is feasible or profitable because the NPV value of the business is more than zero (>0). This is also reinforced by Zamdial et al. (2021), which states that a business is classified as profitable and feasible to run if the NPV value of the business is positive.

Fish processing and marketing businesses can be said to be feasible if the IRR value is greater than the applicable discount factor. The IRR value from the financial feasibility analysis of fish processing and marketing businesses was obtained at 60%. This value indicates that fish processing and marketing businesses are feasible or profitable because the IRR value is greater than the applicable discount factor. This is also reinforced by Khatimah (2019), that if the $IRR > \text{interest rate}$ then the business is feasible to run, while if the $IRR < \text{interest rate}$ then the business is not feasible to run.

The payback period value in fish processing and marketing businesses shows the time required to return the investment that has been issued. The payback period value obtained from the fish processing and marketing business is 2.73, which is 2 years 8 months 22 days. The time required to return the investment from the business is relatively short because it is below the economic life of the investment goods. This is reinforced by Annisa et al. (2023), which states that the success of a business is considered good if its payback period is smaller than the age of the business or project.

3.3 Coastal Women's Business Development Strategy

In SWOT analysis, it is divided into two factors, namely internal and external factors. Internal factors called Internal Factor Analysis Strategy (IFAS) are strategic factors that come from within (internal) the object or subject to be analyzed. While external factors often called External Factor Analysis Strategy (EFAS) are strategic factors that come from outside (external) the object/subject to be analyzed.

Table 2 - Calculation of IFAS Value.

No.	Internal Factors	Weight	Rating	Score
Strengths				
1	There are already coastal women who work as fish processors and/or marketers.	0.4	4	1.6
2	Some coastal women have joined fish processing and marketing groups (poklahsar)	0.3	4	1.2
3	Processing and marketing businesses that already have their own market access	0.3	3	0.9
Total		1.0		3.7
Weakness				
1	The level of human resources is still low	0.3	3	0.9
2	The processing facilities and infrastructure are still simple	0.2	3	0.6
3	Limited capital in running a fish processing and marketing business	0.2	4	0.8
4	There is no digitalization in product marketing	0.3	4	1.2
Total		1.0		3.5

Internal factors in the analysis of coastal women's business development strategy consist of strengths and weaknesses. Internal factors themselves are internal factors that can affect the efforts of coastal women in Tegal Regency. The calculation of the IFAS value can be in the form of internal factors that are given weight, rating and score for each factor. Giving these values will make it easier to analyze internal factors that will be one of the components in the SWOT analysis carried out.

Based on the table above, it is known that the internal factor value (IFAS) is 7.2. The score consists of strength and weakness factors with scores of 3.7 and 3.5 respectively. The IFAS value is obtained by adding the scores on the strength factor with the scores on the weakness factor. While the most dominant internal factor is strengths, but the difference in score with the weakness factor is also low so that the dominant strength factor still has weaknesses that need to be considered. So, an alternative strategy that can be developed is to maximize the strengths that are owned. This is also reinforced by Shobirin and Ali (2019), that the total IFAS value ranges from 1.0 to 4.0 with an average of 2.5 where the IFAS value below 2.5 is weak internally while the IFAS value above 2.5 is strong internally.

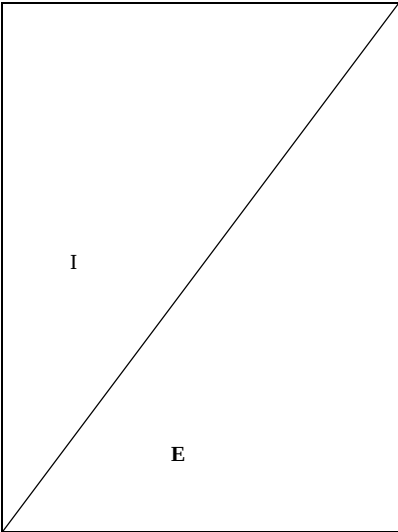
Table 3 - Calculation of EFAS Values.

No.	External Factors	Weight	Rating	Score
Opportunities				
1	Capital assistance from banks (KUR program and others)	0.4	3	1.2
2	Assistance for developing human resources and facilities and infrastructure for processing activities from both the Regional Government and the Central Government	0.3	4	1.6
3	There is already a processing and/or marketing business running	0.3	4	1.2
Total		1.0		4.0
Threats				
1	Uncertain availability of raw materials	0.3	3	0.9
2	Weather conditions that will affect the processing and marketing process	0.3	3	0.9
3	Competition with processed products that use more sophisticated technology	0.4	4	1.6
Total		1.0		3.4

Based on the table above, it is known that the external factor value (EFAS) is 7.4. The score consists of opportunity and threat factors with scores of 4.0 and 3.4 respectively. The most dominant external factor is opportunities where the score on the opportunity factor is greater than the score on the threat factor. So, an alternative strategy that can be developed is to maximize existing opportunities. This is also reinforced by Narto and Basuki (2020), that the preparation of the EFAS matrix through opportunity and threat factors and this matrix can describe the conditions of business opportunities owned and threats faced in product marketing.

The determination of strategy in the SWOT analysis conducted in the coastal women's business development efforts in Tegal Regency is as follows.

Table 4 - SWOT Analysis of Coastal Women's Business Development in Tegal Regency.

	Strengths S1. There are already coastal women who work as fish processors and/or marketers. S2. Some coastal women have joined fish processing and marketing groups (poklahsar) S3. Processing and marketing business that already has its own market access	Weakness W1. The level of human resources is still low W2. The processing facilities and infrastructure are still simple W3. Limited capital in running a fish processing and marketing business W4. There is no digitalization in product marketing
Opportunities O1. Capital assistance from banks (KUR program and others) O2. Assistance in developing human resources and facilities and infrastructure for processing activities from both the Regional Government and the Central Government. O3. There is already a processing and/or marketing business running	SO Strategy SO1. Provide training for the development of processing and marketing businesses so that products have added value (S1, S2, O2 and O3) SO2. Providing a wider processing market so that fishery products can develop both locally and interlocally (S1, S2, S3, O2, and O3)	WO Strategy WO1. Providing appropriate capital assistance for business development (W2, W3, O1, O2, and O3) WO2. Provide support in the development of digital processing business markets (W1, W4, O2, and O3)
Threats T1. Uncertain availability of raw materials T2. Weather conditions that will affect the processing and marketing process T3. Competition with processed products that use more sophisticated technology	ST Strategy ST1. Provide appropriate processing technology assistance to overcome problems that may occur in the processing process (S1, S2, S3, T1, T2, and T3)	WT Strategy WT1. Improving human resources in the fishery product processing business and providing color to the diversification of processed products (W1, W2, W3, W4, and T3)

Based on Table 4. regarding the SWOT analysis that has been carried out, it can be seen the strategies that need to be carried out to develop coastal women's businesses in Tegal Regency. The strategies obtained from the SWOT analysis are in the form of ST, WT, SO and WO strategies where these strategies aim to minimize weaknesses and threats in the future and maximize the opportunities and strengths that are owned. According to Widiastuti and Zulham (2019), SWOT analysis clearly illustrates how the opportunities and threats faced in achieving goals are adjusted to the strengths and weaknesses owned so that anticipatory strategies and policies can be formulated.

The strategies that have been analyzed are then analyzed with the SWOT quadrant with the scores that have been obtained previously. Determining the quadrant in SFAS in the SWOT analysis is done to get SFAS recommendations that are in accordance with existing conditions. based on the quadrant is in quadrant I, namely the SO strategy. The SO strategy itself consists of:

1. Providing training for the development of processing and marketing businesses so that products have added value; and
2. Providing a wider processing market so that fishery products can develop both locally and internationally.

The selection of the SO strategy is carried out by maximizing the strengths and opportunities that are owned so that the strategy can take advantage of conditions from within (internal) and outside (external). In addition to the SO strategy, other strategies are also related to the development of coastal women's businesses in Tegal Regency. In the WO strategy, the thing that needs to be considered is providing appropriate capital assistance for business

development and support in developing the digital processing business market. Then the related ST strategy is providing appropriate processing technology assistance in order to overcome problems that may occur in the processing process. Furthermore, the last is the WT strategy, namely improving human resources in the fishery product processing business and providing a color of diversification of processed products. Based on the SWOT matrix, it is known that one strategy with another is related to the development of coastal women's businesses in Tegal Regency. This is also reinforced by Astuti and Ratnawati (2020), that the SWOT analysis is based on the assumption that an effective strategy will maximize existing strengths and opportunities and minimize weaknesses and threats.

4. Conclusions

The SWOT analysis conducted for coastal women's businesses in Tegal Regency has yielded valuable insights and strategic recommendations. The SO strategy, identified as the primary focus in Quadrant I, emphasizes maximizing strengths and opportunities through training programs and market expansion. However, the interconnected nature of all strategies—SO, WO, ST, and WT—underscores the importance of a comprehensive approach to business development. By addressing weaknesses, mitigating threats, and capitalizing on strengths and opportunities, these strategies collectively aim to enhance the competitiveness and sustainability of coastal women's businesses. Implementation of these strategies, with a particular emphasis on technological adoption, human resource development, and product diversification, has the potential to significantly contribute to the economic empowerment of coastal women in Tegal Regency and foster long-term growth in the local fishery product processing sector.

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