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Development Strategy of Betta Fish (*Betta sp.*) Business in Manado City, North Sulawesi-Indonesia

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A B S T R A C T

This study focuses on the development of the Betta fish market in Manado City, North Sulawesi-Indonesia with the problem being the underdeveloped marketing strategy for Betta fish. Businesses of Betta fish in Manado City require a specific strategy to survive in the competitive business environment, especially for businesses that are seasonal and hobby oriented. This study aims to identify internal and external factors that are strengths, weaknesses, opportunities, and threats, and formulate strategies to be applied in the development of Betta fish business *(Betta sp.)* in Manado City. This type of research is qualitative. Data collection techniques use questionnaires and documentation. Data analysis methods use the SWOT matrix (Strengths, Weaknesses, Opportunities, Threats). In this study, the population is the Betta fish business actors totaling 10 respondents. The results show that the strategy that can be applied in the development of Betta fish business is to support an aggressive growth. This aggressive strategy focuses more on the S-O strategy (Strength-Opportunities), which is a strategy that will utilize all strengths and opportunities to continuously improve until it reaches an optimal point. Actions that need to be taken include increasing the quantity and quality of production to meet market demand, attracting consumer interest by adding more colors of Betta fish, utilizing technological and information developments in the marketing process, and collaborating with hobbyists and Betta fish enthusiasts to facilitate the marketing process

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INTRODUCTION

The welfare, progress, and success of a country are not solely the responsibility of the government, but also require the independence of the community in creating new breakthroughs in business opportunities in various fields or sectors by utilizing the potential of resources that have high economic value added. Indonesia's natural resources have great potential for the development of various agribusiness sectors, including one of them being the fisheries sector (Abidin & Puspitasari, 2018). One potential sector of fisheries that has advantages to compete in driving the national economy is the ornamental fish business, both marine and freshwater ornamental fish, because they have the potential as a source of income for the community and foreign exchange earners (Sugandy, I 2001).

The cultivation of ornamental fish can provide a living for many people who are involved in it. Besides people's love for the beauty of ornamental fish, there are also many people who depend on cultivating and marketing various types of ornamental fish. In Indonesia itself, there is one type of ornamental fish called the betta fish. Betta fish began to be known by the Indonesian people in the 1960s (Perkasa, B.E 2001). Like in Thailand, betta fish was initially only known as a fish caught in rice fields. It was only in the 1970s that this fish began to be introduced as a type of ornamental fish and fighting fish that were bought and sold. The development of betta fish then continued with crossbreeding cases. In Indonesia, the case of betta fish crossbreeding emerged around the 1990s (Perkasa & Henry 2002).

One of the problems in the development of the betta fish market in Manado City is the marketing strategy, which is still not well developed. Betta fish in Manado City requires a special strategy to be able to survive in the tough competition between businesses, especially for businesses that are seasonal and hobby-oriented, such as Betta ornamental fish business. There hasn't been any research on marketing strategies for Betta fish businesses in Manado City, even though this business has the potential to grow further. The urgency of research on Betta fish business related to marketing strategies lies in the potential growth of this business and the lack of existing research. With the right research, effective marketing strategies can be found to increase the visibility and sales of Betta fish. Urgency of the research are this can help businesses in Manado City and other areas to optimize their business potential and promote the growth of the Betta fish industry in Indonesia as a whole. Sustainable betta fish farming can also become a tourist attraction in the Manado region. Research into development strategies can help develop the sustainable tourism potential in the area. Betta fish is one of the popular ornamental fish in Indonesia and has high economic value. However, due to high demand, this species is vulnerable to overexploitation in the wild. Research on development strategies can help manage betta fish populations sustainably.

LITERATURE REVIEW

A. Betta Fish

Betta fish, also known as Siamese fighting fish, belong to the genus Betta within the family Osphronemidae (Nguyen, T. A., & Pham, T. T. 2019). They are popular ornamental fish known for their vibrant colors, elaborate fins, and territorial behavior. The purpose of this literature review is to summarize key aspects of Betta spp., focusing on their biology, behavior, habitat, and conservation status.

1. **Taxonomy and Classification:** Betta fish are classified under the genus Betta, which comprises over 70 recognized species. They are part of the Osphronemidae family, which includes other labyrinth fish known for their labyrinth organs, enabling them to breathe atmospheric air. The most well-known species include *Betta splendens, Betta imbellis, and Betta mahachaiensis* (Bonar, M. D., & O'Rourke, S. M. 2022).

2. **Morphology and Adaptations:** Betta fish exhibit sexual dimorphism, in which males possess more vibrant colors and elaborate fins than females. Their labyrinth organ permits them to take in oxygen from the air, which allows them to live in oxygen-deprived waters such as stagnant ponds, rice paddies, and slow-moving streams in their native Southeast Asia (Belton, B., & Thilsted, S. H., 2014).

3. **Behavior and Territoriality:** Betta fish are notoriously territorial, especially males, which engage in aggressive displays and fights with other males. This behavior has led to the colloquial name, Siamese fighting fish. In captivity, males are often housed separately to prevent aggression and injury, although some can be kept in community tanks under specific conditions (Cao, L., Naylor, R., Henriksson, P., Leadbitter, et al., 2015).

4. **Reproduction and Parental Care:** Breeding bettas involves intricate courtship displays from the male, who builds bubble nests at the water surface using saliva and plant material. After spawning, the male guards the nest and cares for the eggs and fry until they are independent. Betta fries are initially fed on infusoria and later brine shrimp or commercial fried food (Bonar, M. D., & O'Rourke, S. M. 2022).

5. **Habitat and Ecology:** Betta fish are native to Southeast Asian tropical regions, including Thailand, Cambodia, Vietnam, and Malaysia. They inhabit shallow, warm waters with dense vegetation, where they can find shelter and build nests. Due to habitat loss and degradation, wild populations of some Betta species are threatened, highlighting the importance of conservation efforts (Magtoon, W., & Kwanhian, W. 2023).

6. **Conservation Status:** Several species of Betta are listed as vulnerable or endangered due to habitat destruction, pollution, and collection for the aquarium trade. Habitat preservation, sustainable aquaculture practices, and pet ownership education are the main components of conservation initiatives (Ligon, A. D., & Mark, H. M. 2021).

7. **Aquarium Husbandry:** In captivity, Betta splendens is the most kept species, known for its wide range of color variations and ease of care. They thrive in aquariums with warm (24-28°C), clean water and prefer densely planted tanks with hiding spots. Proper diet, water quality maintenance, and space considerations are crucial for their health and well-being (Nguyen, T. A., & Pham, T. T. 2019).

B. SWOT Analysis

SWOT Analysis is a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project or business venture. Here's a concise summary based on existing literature (Pereira, S. C. F., et al., 2023):

1. Strengths:

   SWOT Analysis helps identify internal strengths that give a competitive advantage. These can include unique resources, capabilities, market position, brand reputation, and skilled workforce. Organizations leverage strengths to capitalize on opportunities and mitigate threats.

2. Weaknesses:

   Internal weaknesses are aspects that hinder performance or competitiveness. These can include lack of resources, poor infrastructure, limited market access, outdated technology, or inefficient processes. Identifying weaknesses helps in strategic planning to overcome challenges.

3. Opportunities:

   External opportunities are favorable conditions in the market or environment that an organization can exploit. These may arise from market trends, technological advancements, changes in consumer behavior, emerging markets, or new partnerships. SWOT Analysis helps prioritize opportunities for growth and innovation.

4. Threats:

   External threats are factors that pose risks to the organization's performance or viability. These can include competition, economic downturns, regulatory changes, shifting consumer preferences, technological disruptions, or supplier issues. By identifying threats, organizations can develop strategies to minimize risks.

   SWOT Analysis is widely used across industries for strategic decision-making, business planning, product development, and market analysis. Its simplicity and flexibility make it a valuable tool for assessing both current situations and prospects, guiding organizations towards sustainable growth and competitive advantage (Al-Debei, M. M., & Al-Lozi, E. 2022).

C. Development Strategy in Business

The fish business, encompassing aquaculture, fisheries, and seafood processing, plays a crucial role in global food security, economic development, and environmental sustainability. This literature review summarizes key development strategies in the fish business, focusing on aquaculture, fisheries management, and seafood trade (FAO, 2018).

1. Aquaculture Development Strategies: Aquaculture has grown significantly to meet increasing global demand for seafood. Development strategies in aquaculture include (Pauly, D., & Zeller, D. 2016):
   - Technological Advancements: Innovations in breeding techniques, feed formulation, disease management, and water quality monitoring improve efficiency and sustainability.
   - Market Diversification: Targeting niche markets for high-value species or specialized products like organic or certified seafood.
   - Sustainability Practices: Adopting eco-friendly farming practices, such as integrated multi-trophic aquaculture (IMTA), to minimize environmental impacts.
   - Capacity Building: Training programs and knowledge transfer initiatives to enhance skills among farmers, particularly in developing countries (Magtoon, W., & Kwanhian, W. 2023).
2. Fisheries Management Strategies: Effective fisheries management is essential for maintaining fish stocks and supporting livelihoods. Strategies include:
   - Regulatory Frameworks: Implementing science-based quotas, fishing seasons, and gear restrictions to prevent overfishing and ensure sustainability (Bonar, M. D., & O'Rourke, S. M. 2022).
   - Community Engagement: Involving local communities in decision-making processes and promoting co-management arrangements.
   - Fisheries Enhancement: Stock enhancement programs, habitat restoration efforts, and marine protected areas (MPAs) to conserve biodiversity and replenish fish populations (Vang, S., & Phay, V. 2020).
   - Market Access: Facilitating access to markets through certifications (e.g., MSC, ASC) that validate sustainable fishing practices (Bostock, J., McAndrew, B., et al, 2010).
3. Seafood Trade Strategies: The global seafood trade is complex, involving international markets, regulations, and consumer preferences. Strategies include:
   - Supply Chain Management: Improving transparency, traceability, and cold chain logistics to ensure product quality and safety (Nguyen, T. A., & Pham, T. T. 2019).
   - Market Intelligence: Monitoring trends in consumption patterns, preferences for certified products, and emerging markets (Kaczynski, V. M., & Fluharty, D. L. 2002).
   - Export Promotion: Government support for seafood exporters, market diversification efforts, and participation in international trade agreements.
   - Risk Management: Addressing challenges such as tariffs, sanitary and phytosanitary (SPS) standards, and geopolitical factors impacting trade flows (Anderson, J. L., Asche, F., Garlock, T., & Chu, J., 2015).

4. Challenges and Opportunities: Despite growth opportunities, the fish business faces challenges such as climate change impacts, habitat degradation, illegal fishing, and market volatility. Opportunities include technological innovation, sustainable practices adoption, and meeting increasing demand for protein-rich seafood in global diets (Pauly, D., & Zeller, D. 2016).

METHODOLOGY

This research was conducted in Manado City, North Sulawesi Province. The research was carried out from June to September 2022. The research design used in this study is descriptive qualitative. The research begins with conducting surveys and observations at the research site and conducting interviews and providing questionnaires to Betta ornamental fish entrepreneurs. After that, the data obtained will be inputted into a SWOT matrix for weighting ratings and scores (Rangkuti, 1997; Ramadhan & Rahmatus, 2013). The results obtained from the SWOT matrix will be used as considerations in determining the development strategy for the betta fish (Betta sp.) ornamental fish business (Effendy. I & Oktarisa, 2006).

The types of data used in this study include:

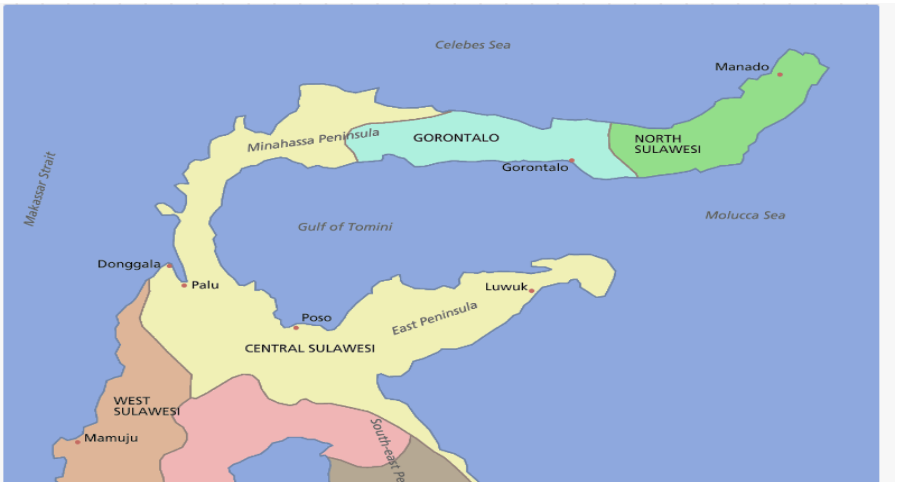
1) Primary data obtained from interviews with Betta ornamental fish business owners to obtain information about the strengths, weaknesses, opportunities, and threats to the Betta ornamental fish business.

2) Secondary data as supporting data obtained from books on development strategies and related institutions such as journals, literature, libraries, and experts.

The variables used in this study are:

a. Internal Factors
   1. Strengths
      a. Types of betta fish colors.
      b. Types of betta fish breeders.
      c. Production inputs can be self-produced.
      d. Collaboration with betta fish traders.
   2. Weaknesses
      a. Lack of experience.
      b. Promotion.
      c. Marketing of Betta ornamental fish still through agents.
      d. Limited capital.

b. External Factors
   1. Opportunities
      a. Demand for betta fish.
      b. Community of betta fish hobbyists and enthusiasts.
      c. Strategic sales location.
      d. Technological and information developments.



Picture 1. Map of Manado-North Sulawesi
(Source: https://cermin-dunia.github.io/pulp/post/gambar-pulau-sulawesi-utara/)

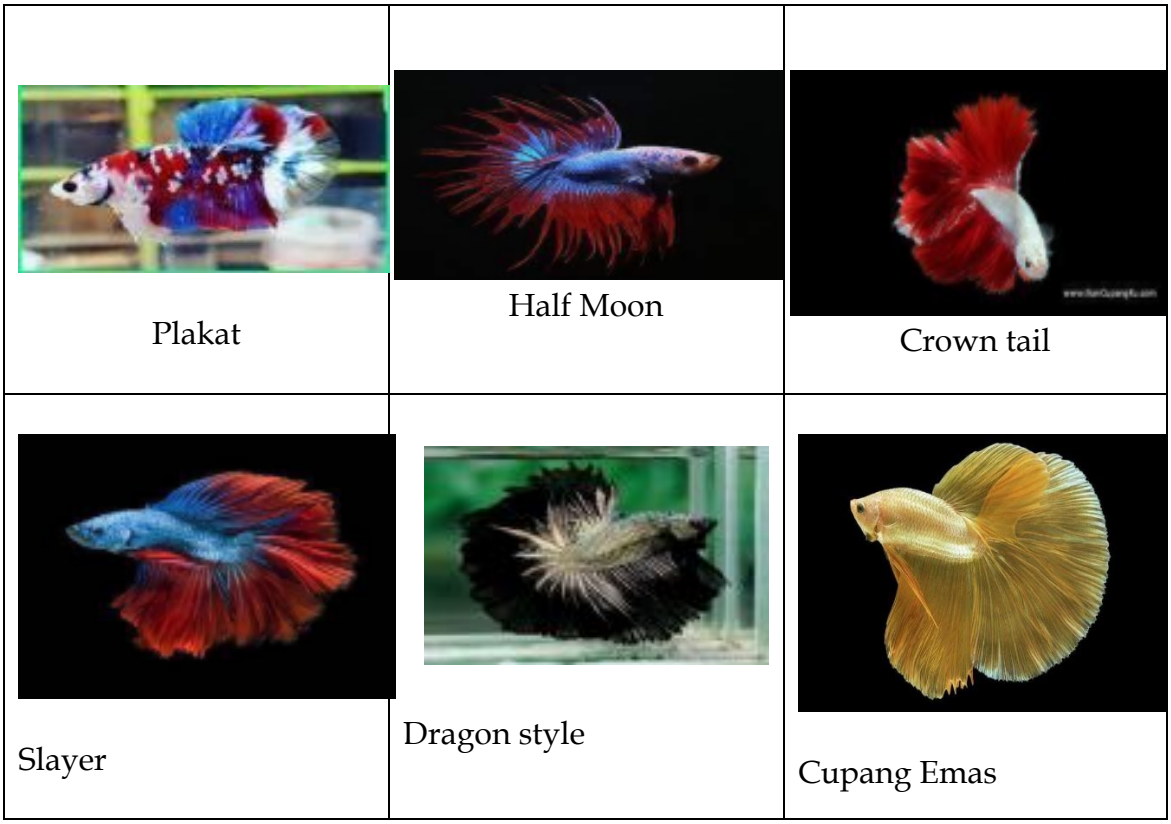
2. Threats
   a. Fluctuating input prices.
   b. Changing market interests.
   c. Partnerships.
   d. Fish pests and diseases.

Data Analysis

The process of determining the strategy is done by identifying internal and external factors and then analyzing them using the IFE Matrix and EFE Matrix (Rangkuti, F 1997). Data analysis uses a SWOT Matrix to describe the strategic development of the Betta ornamental fish business in Manado City. Details of the strategy determination process are as follows: Internal Factor Evaluation (IFE) Matrix, this matrix is used to determine the internal factors of a business related to strengths and weaknesses that are considered important. This matrix is prepared to determine how well the internal condition of the company is. Also, External Factor Evaluation (EFE), this matrix is used to determine the external factors of a business related to opportunities and threats that are considered important. External data is collected to analyze issues related to economics, social issues, culture, demographics, environment, politics, government, law, technology, and competition (Sugiyono, 2005; David, F.R 2009). The rating will be determined using questionnaires addressed to business players, with a total of 10 questionnaires. After the weighting process is completed, the next step is to determine the score for each factor in the four SWOT elements by multiplying the weighting results for each factor in the SWOT element by the ratings in the four SWOT elements. Data from the calculation results of the four SWOT elements will be entered into a formula to determine the X and Y axes, which will then be elaborated into a Cartesian diagram to see where the Betta ornamental fish business in Manado City is positioned so that the researcher can draw conclusions about what strategies can be taken according to the position of the Betta ornamental fish business based on the Cartesian diagram (Rangkuti, 1997;Soekartawi 1999; Riska, dkk 2015).

RESULT AND DISCUSSIONS

According to the survey and research results, the number of Betta ornamental fish stores is 10 stores. The age range of the betta fish ornamental respondents is between 24 and 48 years old, with a high school education level, and on average, they work as entrepreneurs. The respondents in this study are individuals who engage in betta fish breeding and sales, and agents involved in the betta fish business. The number of respondents for Betta ornamental fish stores is 10 people, who are agents in the betta fish business.



Picture 2. Betta Fish in Business-North Sulawesi
(Source: https://www.google.com/groups/KomunitasCupangHias)

Internal and external Environmental Analysis aims to identify the strengths and weaknesses in Betta ornamental fish farming activities. This Internal Environment is derived from interviews and observations in the field. Analysis of the external business environment relates to external conditions that affect activities. The identification of external factors is very important because they are conditions that cannot be directly controlled (David, F.R 2009).

Strengths

a. Diversity of Betta ornamental fish Color Types. From the crossbreeding process conducted by entrepreneurs in Betta ornamental fish farming activities, it results in a diversity of Betta ornamental fish colors. This diversity of colors will increase the selling price (Sugandy I 2001).
b. Breeder Types. There are many variations of betta fish that are usually classified according to their patterns and tail types, which can be seen

from their long flowing shapes to short and neat tails (Yusnita et al. 2003).

c. Production Inputs Can Be Self-Produced. In the production process, various types of production inputs are made or produced by the business actors themselves, such as Betta ornamental fish feed (Yusnita et al. 2003).
d. Collaboration with Betta ornamental fish Traders. With good cooperation with Betta ornamental fish traders, breeders will find it easier to market their production (Bungin, B 2011).

Weaknesses

a. Minimal Experience. Minimal experience is one of the obstacles faced by Betta ornamental fish business actors. With minimal experience, breeders still must learn and seek information about good breeding techniques (Sitanggang, 2008).
b. Promotion. Promotion is an effort to provide or introduce products or services to attract potential customers to use those products or services. Therefore, promotion becomes one of the strategic factors determining the development of the Betta ornamental fish market in Manado City, and generally, betta fish business actors have started to sell not only through physical stores but also through social networking applications to promote the betta fish they have (Karo-karo FW, 2006).
c. Marketing of Betta ornamental fish is still through agents. In the marketing process of their products, Betta ornamental fish traders still use intermediary traders. This is due to the limited access of breeders to market their products directly to consumers. With the help of intermediary traders in marketing their production, it will result in price cuts received by the producers (Linke, H 1994).

Picture 3. How to Care for Betta Fish
(Source: Personal Photo)

d. Limited capital. The source of capital for Betta ornamental fish breeders in the research area generally comes from personal funds. Therefore, the

capital owned by breeders is very limited, so they cannot develop their business on a large scale (Abidin & Puspitasari 2018).

Opportunities

a. Betta ornamental fish are highly sought after in the market. Betta fishes are highly sought after in the market because they are widely known among the public. In addition to being easy to care for, Betta ornamental fish also have a variety of color patterns, making them quite popular (Sitanggang, 2008).
b. Presence of hobby communities of betta fish enthusiasts. With the presence of hobby communities of betta fish enthusiasts, the demand for Betta ornamental fish will continue to increase. Generally, consumers will be more enthusiastic if they are part of a betta fish enthusiasts' community. Members of this hobby community will interact and communicate with each other to increase their love for these fish (Perkasa, B. E 2001). Example: Betta ornamental fish Association Group in North Sulawesi.
c. Strategic farming location. The location of the farming is very strategic, being close to the city center, which makes it easy for breeders to market their products (David, F.R 2009; Kaunang, S. T, dkk., 2024).
d. Development of technology and information systems. The development of technology and information systems will make it easier for business actors to run their businesses with technological assistance. In addition, the development of information also plays an important role for actors in understanding the proper Betta ornamental fish farming techniques. Furthermore, it will also make the marketing process easier (Effendy & Oktariza 2006).

Threats

a) Fluctuating Production Input Prices. Fluctuating prices of production inputs, such as fish feed and medications, lead to an increase in production costs, which will affect the prices of ornamental fish in the market (Abidin & Puspitasari, 2018). This is anticipated by providing effective feed to reduce the operational costs of Betta ornamental fish farming. This is a threat because increased production inputs will result in less profit for the breeders.
b) Changing Market Trends. As market trends or consumption patterns change, every Betta ornamental fish breeder must adapt to the evolving market demand to ensure the sustainability of their business. If producers are unable to keep up with market trends, they will incur losses (Perkasa & Hendry, 2002).
c) Partnerships. Partnerships provide significant benefits for economic growth, including job creation, income distribution, and the development of the Betta ornamental fish business economy. The abundance of Betta ornamental fish farming in Manado City sometimes causes prices to drop, forcing breeders to sell to Betta ornamental fish partners, such as Betta ornamental fish stores. Therefore, with partnerships, Betta ornamental fish business actors no longer need to worry about their betta fish being sold at low prices because there are

partners who will accept and accommodate the betta fish they have. Conversely, Betta ornamental fish stores and betta fish business actors will not have difficulty obtaining betta fish stock if demand increases. In this way, both parties will benefit (Yusnita et al. 2003; Kaunang, S.T dkk., 2024).

d) Betta ornamental fish Disease. If Betta ornamental fish diseases are not addressed, they can lead to the death of betta fish. Generally, there are six types of Betta ornamental fish diseases, with the most common diseases being paralysis and skinny back disease (Zairin, M & Sumantadinata, 1998b; Kaunang, S., dkk. 2018).

After identifying the internal factors of strengths and weaknesses in the Betta ornamental fish (Betta sp.) business in Manado City, the preparation of the EFAS matrix is like the steps for preparing the IFAS matrix (Bungin, B 2011). The difference is that the IFAS matrix includes the factors of strengths and weaknesses, which are then transferred to the IFAS matrix table for scoring. The results of matrix analysis can be seen in the table below:

Table 1. IFAS (Internal Factors Analysis Summary) and EFAS (External Factors Analysis Summary)

Indicators	Importance (%)	Rating	Score (Importance x Rating)
Strengths			
Diversity of betta fish color	0.192	4	0.76
Betta fish breeder types	0.178	3.7	0.65
Production inputs can be self-produced	0.139	2.9	0.40
Collaboration with Betta ornamental fish traders	0.168	3.5	0.58
Weaknesses			
Minimal experiences	0.076	1.6	0.12
Promotions	0.105	2.2	0.23
Marketing of Betta ornamental fish through agents	0.067	1.4	0.09
Limited capital	0.075	1.5	0.11
Opportunities			
Betta ornamental fish are highly sought after in the market	0.181	3.9	0.70
Presence of hobby communities of betta fish enthusiasts	0.185	4	0.74
Strategic farming location	0.185	3.4	0.53
Development of technology and information systems	0.148	3.2	0.47
Treats			

Fluctuating prices	0.120	2.6	0.31
Changing market trends	0.079	1.7	0.13
Partnerships	0.064	1.3	0.08
Betta ornamental fish disease attacks	0.065	1.4	0.09
Total		1	3.05

Source: Primer Data

The analysis of the IFE matrix shows that the highest strength factor is the diversity of betta fish color types with a weight value of 0.192, a rating of 4, and a score of 0.76. The lowest strength factor is the production inputs can be self-produced with a weight value of 0.139, a rating of 2.9, and a score of 0.40. The highest weakness factor is promotion with a weight value of 0.105, a rating of 2.2, and a score of 0.23. The lowest weakness factor is the marketing of betta fish ornamental fish through agents with a weight value of 0.067, a rating of 1.4, and a score of 0.09. The total IFE score obtained from the analysis of the above internal factors is 2.94.

The analysis of the EFE matrix shows that the highest opportunity factor is the presence of hobby communities of betta fish enthusiasts with a weight value of 0.185, a rating of 4, and a score of 0.74. The highest threat factor is fluctuating prices with a weight value of 0.120, a rating of 2.6, and a score of 0.31. The lowest threat factor is partnerships with a weight value of 0.064, a rating of 1.3, and a score of 0.08. The total EFE score obtained from the analysis of the above external factors is 3.05.

From Diagram of Cartesian, we found:

$$\textbf{X Axis} = \frac{\textbf{S + W}}{\textbf{2}} = \frac{\textbf{2.39 + 0.55}}{\textbf{2}} = \textbf{1.47}$$

$$\textbf{Y axis} = \frac{\textbf{O+ T}}{\textbf{2}} = \frac{\textbf{2.44 + 0.61}}{\textbf{2}} = \textbf{1.53}$$

Based on the calculations above, it shows that the Betta fish ornamental fish (Betta, sp.) business in Manado City is located at X-axis = 1.47 and Y-axis = 1.53. After obtaining the X and Y axes, the next step is to use a Cartesian diagram to find the coordinate point in which quadrant the Betta fish ornamental fish (Betta, sp.) business is located, which is: aggressive. This aggressive strategy is more focused on the S-O (Strengths-Opportunities) strategy, which involves utilizing all strengths and opportunities and continuously improving until reaching an optimal point (Abidin & Puspitasari, 2018; Saragih, B 2001).

In this study, the conclusion is that the S-O strategy is a strategy that utilizes internal strengths of a business to take advantage of external opportunities, namely:

1) Increasing the quantity and quality of production to meet market demand (S3, O1).

2) Attracting consumer interest by adding new colors of betta fish (O2 and S1).
3) Utilizing technological and informational advancements in the marketing of betta fish (O4, S1).
4) Collaborating with hobbyists and betta fish enthusiasts to facilitate the marketing process (S4, O2).

CONCLUSIONS AND RECOMMENDATIONS

Based on the data analysis, the Betta ornamental fish (Betta, sp.) business is in a developing position by implementing an aggressive strategy to enhance all existing strengths and opportunities to optimize sales. Among these strategies, the most suitable one for the Betta fish ornamental fish (Betta, sp.) business is the S-O strategy (Strengths and Opportunities), which involves enhancing all existing strengths and opportunities to optimize sales. This includes increasing the quantity and quality of production to meet market demand, attracting consumer interest by adding new colors of betta fish, utilizing technological advancements in betta fish marketing, and collaborating with hobbyists and enthusiasts to facilitate the marketing process.

FURTHER STUDY

Further studies or advanced research on the development of betta fish in Manado could delve deeper into specific aspects such as:

1. Conducting detailed studies on the environmental impact of betta fish farming in Manado, including water quality, habitat degradation, and biodiversity loss, and developing mitigation measures to minimize negative effects.
2. Conducting market surveys and consumer preference studies to understand the demand for betta fish products, both locally and internationally, and tailor production strategies accordingly.
3. Conducting economic analyses to assess the viability and sustainability of betta fish farming in Manado, including cost-benefit analyses, value chain assessments, and market forecasting.

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