
APPLICATION OF THE 4P MARKETING STRATEGY TO SUPPORT THE SUSTAINABILITY OF SEAWEED SMALL AND MEDIUM ENTERPRISES (SMES) IN BARRU REGENCY, SOUTH SULAWESI

Qaulan Zakilah Aulia Ihwan, Nabila Hidayatul Amalia, Meline Gerarita Sitompul*

Pangkep State Polytechnic of Agriculture, Pangkep City

*Corresponding author: melinegerarita.s@gmail.com

Abstract

Barru Regency is one of the largest seaweed-producing areas in South Sulawesi. However, marketing seaweed in this region faces significant challenges, such as price fluctuations and limited market access. The sustainability of seaweed marketing is influenced by various factors, including product quality, market prices, distribution channels, and promotional strategies. This research employs a descriptive literature review method aimed at analyzing the implementation of the 4P marketing strategy (Product, Price, Place, Promotion) to enhance the competitiveness of seaweed from Barru Regency. The data for this article have been selectively gathered from several journals and research reports related to the topic. The results of the literature review indicate that improving the quality of seaweed products through enhanced processing and packaging technology is likely increase their sales value. Furthermore, adopting a more flexible pricing strategy based on market analysis can help farmers manage frequent price fluctuations. It is also estimated that utilizing e-commerce and strengthening local distribution networks can expand market access and reduce reliance on intermediaries. This analysis demonstrates that a holistic implementation of the 4P strategy has the potential to enhance the sustainability of seaweed marketing in Barru Regency. Ultimately, this is expected to increase farmers' income and strengthen the product's position in the domestic market.

Keywords: E-commerce, Market access, Price fluctuations, Seaweed, 4P marketing Strategy.

INTRODUCTION

Currently, the development of Indonesia's seaweed aquaculture business continues to increase along with the global demand for seaweed (Rusman *et al.*, 2018). Seaweed farming in Indonesia continues to progress rapidly, triggered by the high global demand for this commodity. Seaweed is one of the most important marine products, and Indonesia is one of the countries that are in high demand due to its ease of cultivation and promising profit potential. This situation motivates many people to engage in seaweed farming, both in pond areas and in the open sea.

Seaweed has become one of the most promising resources today. It can be seen from the increase in seaweed production and demand around the world. Seaweed production has increased significantly in the last 20 years, and also plays an important role in the fishing industry in each country. Based on data from FAO, the amount of world seaweed production in 2021 is 36.3 million tons. Seaweed production is dominated by *Laminaria* sp with a contribution of 36.7%, followed by *Kappaphycus* sp (17.2%), *Gracilaria* sp (16.5%), *Undaria* (7.6%), *Eucheuma* sp (6.8%), and other types (15.2%). Demand for seaweed continues to increase with an average growth of 10.4% per year. In 2022, the seaweed demand value was recorded at USD 3.71 billion. Diagram 1 shows the development of the global seaweed market for the period 2017-2022 where Indonesia supplies 16.2% of the total world seaweed market. The export value of seaweed contributes about 1% of the total export of fishery products (Hendrawati, 2016).

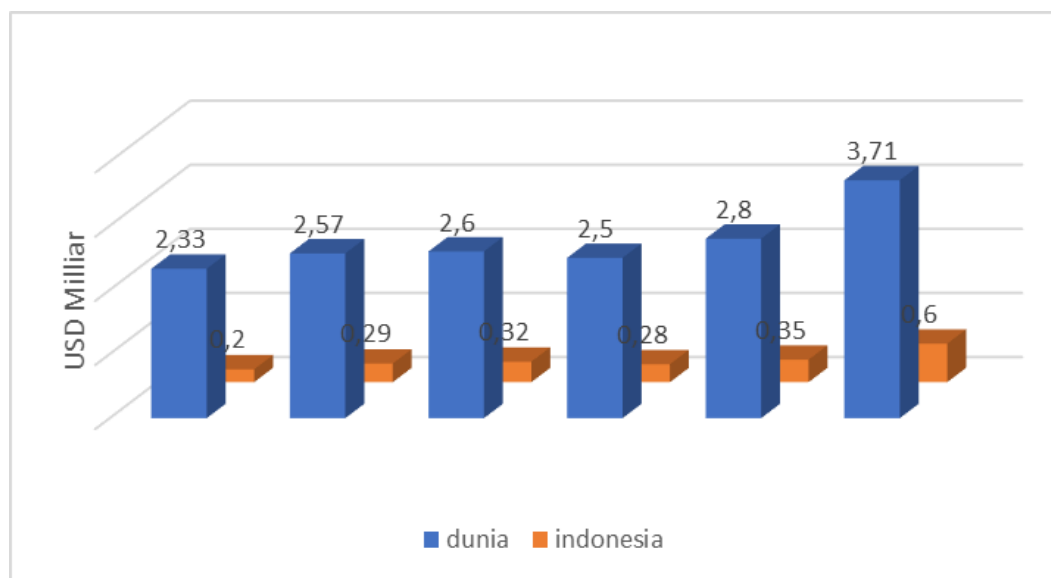


Figure 1. Development of the global seaweed market for the period 2017-2022

South Sulawesi is the largest seaweed producer in Indonesia, even data from one kkp data, 2023 South Sulawesi occupies the first position which in 2022 produced 3,796,882 tons of seaweed. The increase in seaweed production in South Sulawesi grows very significantly from year to year. Table 1 shows the increase in seaweed production and exports in South Sulawesi Province in recent years. This illustrates that seaweed production in South Sulawesi has experienced a significant increase in production and export growth.

Table 1. Data on seaweed production and export volume growth in South Sulawesi

Year	Production		Export	
	Volume (tons)	Growth(%)	Volume (tons)	Growth (%)
2019	2 436 704	-	113, 52	-
2020	3 442 076	41.3%	117, 92	3.87%
2021	3 787 798	10.04%	132, 241	12.1%

Activities of fishing communities in seaweed cultivation in South Sulawesi Province are very high, which are carried out in several districts/cities in this area, including Palopo, Luwu, North Luwu, East Luwu, Bone, Wajo, Sinjai, Bulukumba, Selayar, Bantaeng, Jeneponto, Takalar, Makassar, Maros, Pangkep, Barru and Pinrang.

Barru District as one of the districts in South Sulawesi is a seaweed producer that also contributes to seaweed commodities in South Sulawesi Province. The production centers of seaweed cultivation in Barru District are in Tanete Rilau and Barru Districts (Rusdi et al., 2023).

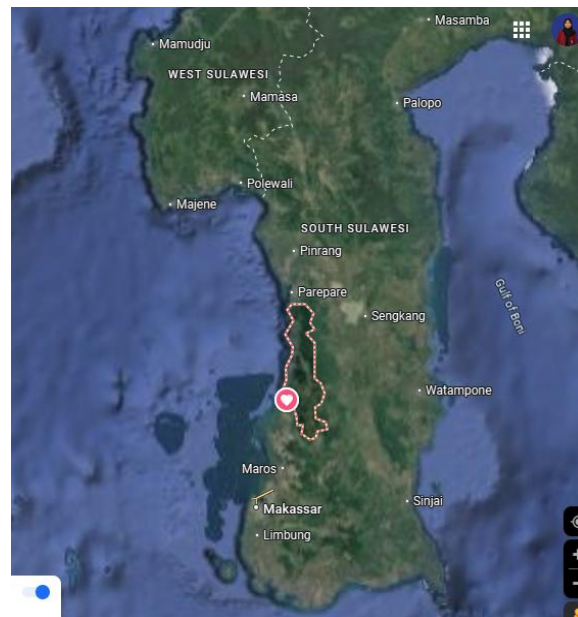


Figure 1. Regional map of Barru Regency, South Sulawesi

It can be seen on the map that Barru District is an area with a geographical location in the coastal area. Barru Regency as one of the regions in South Sulawesi Province which is located in a cross position with a coastal stretch of 78 km, with an elongated coastline is a potential area for the development of marine and fisheries resources including seaweed commodity cultivation (Herawaty, 2020). The great potential of seaweed in Indonesia is then utilized by the surrounding community by developing businesses in the seaweed sector.

Micro, Small and Medium Enterprises (MSMEs) play an important and irreplaceable role in modern society. Their existence provides great benefits, especially in helping to equalize income among the community. In addition, MSMEs also encourage innovations that support the preservation and development of traditional values and local culture. On the other hand, with the ability to absorb a large number of workers, MSMEs play a significant role in reducing the unemployment rate, in line with Indonesia's large population. MSME development is very strategic in driving the national economy, considering that its business activities cover almost all business fields so that the contribution of MSMEs is very large for increasing income for low-income people. (Hamidah, Sejati, & Mujahidah, 2019).

Seaweed MSMEs in Barru have the potential to continue to be improved, especially since the demand for seaweed continues to increase, opening up opportunities for farmers to increase their product capacity. However, if the intensity of activities is increased by the cultivators, the challenge is that there are more dimensions that must be considered. There are many obstacles and problems faced by farmers such as limited superior seeds because farmers only rely on seeds from the previous harvest, while seaweed seeds can reproduce well if environmental conditions, such as water temperature, salinity, and sea depth, support their growth. In addition, the availability of adequate nutrients and proper care in terms of planting location selection also affect the success of seaweed breeding. Another problem faced by farmers is the fluctuating price of seaweed and the low selling price due to the limited knowledge of farmers about industry prices at the consumer level. Not only that, cultivators in Barru district also only sell seaweed as raw material, whereas if processed into various processed products, the selling price will be higher than just selling the

seaweed as raw material. In fact, according to the data, to optimize the great potential of MSMEs in driving the economy, the application of Marketing Mix is needed.

Marketing mix is an integrated marketing strategy or marketing strategy that is implemented simultaneously with the application of strategic elements in the marketing mix itself (Salma, 2020). The marketing mix is all the activities a company uses to influence consumer responses and consistently achieve its marketing objectives in its target market consisting of products, prices, places and promotions (Alamsyah, 2022). The concept of 4P in the marketing mix is very strategic.

The 4Ps include Product, Price, Place, and Promotion, which can help MSMEs develop their businesses effectively. According to Alamsyah (2022) a **product** is an understanding of something produced by a producer, offered as an effort to realize organizational goals by meeting the needs and desires of consumers. MSME products must be tailored to the needs and desires of consumers in order to meet market demand effectively and efficiently. **Price** is the only element of the marketing mix that generates income or revenue for the company. (Rada, 2019). Therefore, proper pricing is essential to ensure the sustainability and profitability of the company. Pricing that is competitive and in accordance with product value can influence consumer attractiveness, as well as increase sales volume. In addition, an effective pricing strategy can also differentiate products in the market, strengthen brand positioning, and create long-term customer loyalty. According to Khumairoh & Dewi (2020), **promotion** is one of the variables in the marketing mix used by companies to communicate with the market. Promotion not only aims to introduce products, but also as one of the determining factors for the success of a marketing program. Through effective promotion, an MSME can attract consumer attention, and increase repeat purchases. **Distribution** is a place or distribution channel that is interdependent and involved, in providing a product or service for use or consumption by consumers or business users (Riswanda & Ernestivia, 2022). An efficient and timely distribution process is very important in ensuring customer satisfaction and the smooth flow of goods or services from producers to end consumers. The marketing concept states that achieving organizational goals such as market share and profitability depends on the company's ability to determine the needs and wants of the target market and satisfy them more effectively and efficiently than its competitors.

LITERATURE REVIEW

Writing an article review is a method of writing articles that is systematic, explicit and reproducible to carry out identification, evaluation and synthesis of research works and ideas that have been produced by researchers. (Rahayu, Syafril, Wekke, & Erlinda, 2019), The table below is the result of a literature review in this journal.

Table 2. Literature review

No	Research Name	Research Title	Research Method	Research Result
1	Muhammad Gunawan Sani Saputro, Nunung Nuryartono, Bustanul Arifin, and Nimmi	Crafting Design Strategy On Seaweed Industry In Indonesia	Place and time of the study: Bogor Regency, West Java, from early February 2019 to June 2022.	This study reveals that Indonesia's seaweed industry competitiveness is still low in the global market, despite the country's highly strategic geographical advantages. Based on descriptive statistics, the ability of seaweed farmers to overcome various challenges significantly affects their competence. Currently, the diversification of

Zulbainarni
(2021)

Data sources:
Primary data and
secondary data.
Data collection
techniques:
Questionnaires,
interviews, and
published records.

seaweed products in Indonesia is very low, with about 80% of exports consisting of dried raw materials. Therefore, expanding product diversification is essential to enhance the industry's competitiveness.

Analysis using the Revealed Comparative Advantage (RCA) method indicates that Indonesia's seaweed products have a comparative advantage in exports, with an RCA value greater than 1 and a highest average of 27.92 between 2012 and 2019. However, the majority of exports consist of raw seaweed, which has low added value. This suggests that while Indonesia holds a comparative advantage, the exported products are not generating maximum profit. Thus, it is crucial to improve the competence of farmers and entrepreneurs to create higher value-added products. According to the Export Product Dynamic (EPD), countries such as Indonesia, South Korea, and the UK have shown significant growth in seaweed exports, while countries like China, Chile, and the United States have strong comparative advantages. However, countries like the Netherlands and Japan show lost opportunities in terms of seaweed competitiveness. Structural Equation Modeling - Partial Least Squares (SEM-PLS) analysis reveals that two key variables affecting the competitiveness of the seaweed industry are the main production factors and innovation attributes. Other factors such as strategy structure, competition, communication channels for innovation diffusion, and the role of the government also significantly influence competitiveness. The managerial implications of these findings suggest that Indonesia's seaweed industry needs to improve efficiency and leverage external environments to reduce production costs, making product prices more competitive. Additionally, companies are encouraged to educate farmers and communities about modern cultivation techniques to improve product quality and ensure sustainable seaweed supply. By taking these steps, the competitiveness of Indonesia's seaweed industry in the global market is expected to improve significantly.

2	Muhammad Rusman, Saiful, Farid Mardin, Ilham Bakri (2018)	Pendampingan Penyusunan Perencanaan Produksi Industri Kecil Menengah Petani Rumput Laut di Kabupaten Barru	Place and time of research: Barru Regency, 2 years of community service Data sources: Primary and secondary data Data collection techniques: Observation, interviews, and published records.	This study reveals that in Barru Regency, the seaweed production increased from 488 tons in 2010 to 722 tons in 2011. However, farmers face challenges such as unstable market prices and diseases affecting the seaweed crops. In response to these issues, the community empowerment program conducted by Hasanuddin University provided training in production planning and diversification of seaweed processed products. Assistance was given to help farmers develop production plans and improve the quality of processed seaweed products, such as seaweed nuggets and meatballs. Additionally, training on Seaweed Cultivation Technology was provided to enhance farmers' knowledge of better cultivation techniques using the latest methods, which are expected to improve production yields and the farmers' welfare. Training on Occupational Health and Safety (K3) was also given to Small and Medium Enterprises (SMEs) to emphasize the importance of health and safety aspects, thereby increasing productivity and reducing the risk of workplace accidents.
3.	M. Risal and Salju (2017)	Pengaruh Bauran Pemasaran (4Ps) Dalam Meningkatkan Kinerja Pemasaran	Research location: South Sulawesi Data sources: Primary data and secondary data Data collection techniques: Conclusive research and exploratory research.	This study conducted a validity test on the research variables, including market strategy and orientation, resource uniqueness, marketing mix, and marketing performance. The validity test using the product-moment correlation (validity index) showed that all statement items for each variable were valid and can be used in the study. The research also analyzed the marketing mix and assessed the validity of indicators within those variables. The results showed that the marketing mix (product, price, promotion, and place) had a composite reliability (C-R) value of 0.9309, indicating high consistency. The average variance extracted (AVE) value of 0.4273 met the minimum standard for a good construct. Three main dimensions of marketing performance—sales volume, market share, and profitability—were examined. The results showed that marketing performance had a composite reliability of 0.9285, indicating high consistency, and an AVE value of 0.6504, demonstrating that marketing performance met good standards. The sales volume

dimension contributed the most to marketing performance.

The marketing mix in this study was found to influence the marketing performance of the small seaweed processing industry in South Sulawesi Province. The influence covered product, price, promotion, and distribution. All of these factors are crucial to improving marketing performance, as reflected in the path coefficient value of 0.183 with $R^2 = 0.033$. Overall, the analysis shows that the marketing mix and marketing performance influence each other, and dimensions such as promotion and distribution should be given more attention to enhance performance.

4	Rismawaty Rusdi, Irnintha Nanda Pratami Irwan, and Fitri Indah Yani (2023)	Analisis Status Keberlanjutan Budidaya Rumput Laut (<i>Eucheuma cottonii</i>) di Kabupaten Baru: Metode Modifikasi Rap- Seaweed	Research Location: Baru Regency, July-August 2023 Data Sources: Primary and secondary data Data Collection Techniques: Interviews, discussions, and existing data	Ecological In general, the three locations (Lasitae Village, Pancana Village, and Corawali Village) demonstrate a relatively sustainable ecological status due to minimal threats from industry and pollution. However, Tanete, Mangempang, and Coppo, which are closer to urban centers, face higher levels of pollution. The quality of seaweed seedlings in these areas is also problematic, as many farmers use self-harvested seedlings that are prone to damage and diseases. The use of disease-resistant tissue culture seedlings is recommended to improve quality. Economic Tanete, Mangempang, and Coppo have better economic conditions with higher incomes. Farmers in these locations generally use their own capital, while in the other three villages, farmers rely on loans. The marketing system for seaweed still depends on local markets and traditional intermediaries, which affects farmers' income. Social Four locations (Lasitae, Pancana, Corawali, Tanete) show a relatively good social status, with farmers having better education levels. Farmers with lower education tend to have limited knowledge of new technologies and struggle to shift to other occupations. Older farmers and the lack of generational replacement are also challenges. Institutional Institutional sustainability index in all locations is considered low. This includes institutions related to capital, extension	Dimension: Dimension: Dimension: Dimension:
---	---	---	---	--	--

services, and local government support. Stronger institutions and greater political support are needed to support the sustainability of seaweed farming.

Technology Dimension:
All five locations show a relatively sustainable technological status; however, inadequate drying and storage facilities remain problematic. Improper drying and poor storage can reduce the quality of seaweed produced.

Policy Recommendations:
Improved Availability and Seedling Quality: Provide high-quality seedlings through seaweed nurseries and further research to enhance seedling quality.

Improved Marketing and Price Stability: Establish an organization to link farmers, middlemen, and industries to ensure a stable market.

Farmer Knowledge Enhancement: Provide training and extension services to improve farmers' skills and technology adoption.

Political Support and Government Commitment: The government must support this sector with clear policies and adequate facilities.

Improved Drying and Storage Facilities: Provide proper drying and storage facilities to maintain the quality of seaweed.

With improvements in institutional, economic, and ecological dimensions, the sustainability of seaweed farming in Barru Regency is expected to be enhanced.

5	Qotrunnada Ratri Hamidah, Agung Tri Pambudi Sejati, and Ana Zulfatu Mujahidah	The Development of Small and Medium Businesses (MSMEs) Based on Technology to Deal with The Industrial Revolution 4.0	Research Location: Barru Regency, July-August 2023 Data Sources: Secondary data Data Collection Techniques: A study of books, literature, notes, and existing reports	The Fourth Industrial Revolution (Industry 4.0) is a phase of technological revolution that changes the way humans operate across scale, scope, complexity, and transforms past life experiences. The fundamental principle of Industry 4.0 is to combine machines, workflows, and systems by applying smart networks throughout production chains and processes, enabling them to control one another autonomously. Rapid technological advancements will drive changes in societal behavior, and the increased demand will lead to new business opportunities and job creation. New business opportunities are driven by the development of internet usage. Business practitioners are increasingly recognizing the
---	---	---	---	--

potential of the internet in business processes. The use of the internet in business will continue to evolve, from electronic information exchange to business strategies, marketing, sales, and customer service applications. The internet also facilitates global communication and cooperation among employees, consumers, vendors, and business partners. It enables people from different locations or organizations to collaborate virtually to develop, produce, market, and maintain products or services.

To develop technology-based Micro, Small, and Medium Enterprises (MSMEs), M. Alfian Mizar suggests: 1) applying technology in production machinery and product finishing, 2) enhancing products for national and export markets, 3) optimizing production layout, 4) improving management practices, and 5) expanding market reach through online platforms and partnerships.

Impacts of Technology on MSMEs Development include:

Overcoming issues of quantity and quality improvement through the use of production machinery and equipment.

Product development for national and export markets by enhancing technical and managerial skills, supported by experts to improve product design quality, production capacity, business management software applications, and online web marketing for MSMEs products.

Streamlining the production process, increasing safety, and ensuring worker comfort.

Expanding the domestic and export market share.

Increasing the number of employees and improving product turnover

RESEARCH METHOD

The research method is the procedure used by researchers in collecting data related to their research. In looking at the potential application of the 4Ps of seaweed businesses in Barru Regency, researchers used a descriptive literature review method. In general, a literature review is defined as a summary derived from various reading sources relevant to the research topic. Citing a study, to be able to get a theory, researchers must conduct a literature review. Researchers must be able to find relevant literature and organize it properly for research purposes (Ridwan, AM, Ulum, & Muhammad, 2021).

The study also explained that there are 2 main points in the literature review, namely:

- 1.) Supporting theories that are used as a foundation. This theory is divided into three types, namely grand theory, middle range theory, and applied theory.
- 2.) Previous research that examines the same problem.

1. Type of Research

In examining the application of the 4Ps, researchers use descriptive qualitative research. Based on research that uses a qualitative approach has the aim of deepening understanding of human and social problems. According to Fadli (2021) Qualitative research seeks to find and describe narratively the activities carried out and the impact of the actions taken on their lives. In explaining the application of Marketing Mix in MSMEs in Barru Regency, researchers use a qualitative approach in explaining the results of the literature study analysis and describing it as a result of the literature review.

2. Types and Sources of Data

In collecting the literature review, researchers used secondary data sources in the form of books, scientific journal articles related to marketing and seaweed cultivation, and previous research reports. Data sources are everything that provides information about related research. Meanwhile, secondary sources according to Husein Umar (2013) are primary data processing and presented in the form of tables or diagrams, by primary data collectors or by other parties. The secondary data source is then finally processed as a reference source in research.

3. Data collection technique

Data were collected through a selective literature review, by seeking references from books, scientific journal articles related to seaweed marketing and cultivation, and previous research reports. A literature review is vital because ideas and objectives about the main topic of the research can emerge from there (Ridwan, AM, Ulum, & Muhammad, 2021). Data selection was based on its validity and relevance to the analysis of seaweed marketing strategies.

4. Data Analysis Technique

This research uses qualitative descriptive data analysis techniques. Data analysis is the process of organizing and sorting data into patterns, categories, and basic description units so that themes can be found and hypotheses can be formulated as suggested by the data (Yuliani, 2016). Where qualitative descriptive research is defined as research that examines natural social action events emphasizing how people interpret, and understand their experiences to understand social reality so that individuals are able to solve their own problems (Mohajan, Haradhan, 2018).

RESULTS AND DISCUSSION

This study analyzed the development of the 4P marketing strategy (Product, Price, Place, Promotion) in supporting the sustainability of seaweed-based Micro, Small and Medium Enterprises (MSMEs) in Barru District.

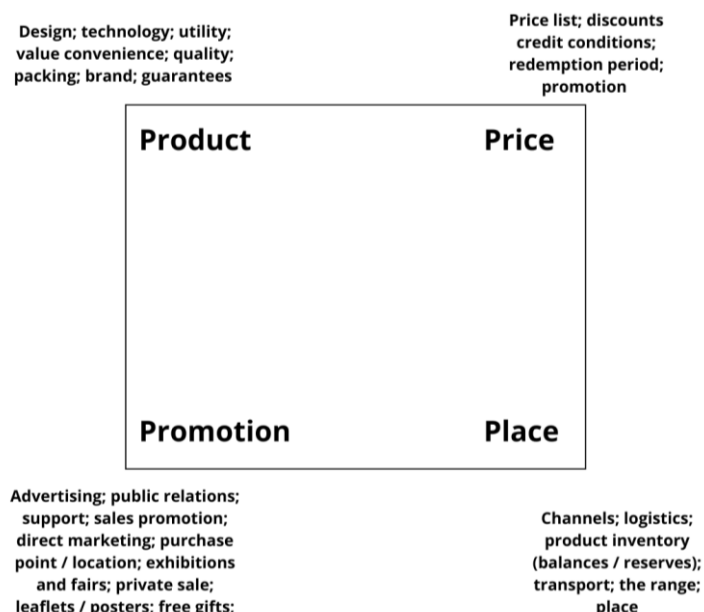


Figure 3. "4P" Marketing mix elements (Gronholm (2012))

The analysis was conducted by examining the existing potentials and challenges, as well as evaluating the implementation of the 4P strategy in the local context. The following are the results and discussion based on the 4P components:

1. Product

Seaweed from Barru Regency, especially the *Kappaphycus* sp. and *Gracilaria* sp. species, have great potential, both in the domestic and international markets, *Kappaphycus* sp. and *Gracilaria* sp. are seaweed species that have high carrageenan content, which are used in various industries such as food, cosmetics, pharmaceuticals, and other industries. This makes Barru seaweed have the potential to be processed into various value-added products. Globally, the demand for seaweed products continues to increase, especially for raw materials in the food industry (such as agar-agar), cosmetics, and health products. Countries such as Japan, Korea, and countries in Europe are potential markets for seaweed products from Barru, which offer great export opportunities. Although Barru seaweed products have potential, product diversification carried out by MSMEs in Barru is still very limited to raw or semi-finished materials, such as agar-agar. This happens because:

- Most MSMEs in Barru still focus on producing seaweed in raw or semi-finished form, which is usually used as raw material by other industries. In fact, the current market prefers processed and ready-to-use products, such as seaweed-based snacks, natural cosmetics, or health supplements.
- Many MSMEs in Barru still have limited knowledge and skills in processing seaweed into value-added products. In addition, there are limitations in terms of resources, both in terms of adequate production tools and facilities, as well as the ability to market processed products to a wider market.

To increase the added value and competitiveness of Barru seaweed products, innovation of seaweed-based products is very much needed. Seaweed has great potential to be processed into various food products, which can provide additional income if small and medium enterprises (SMEs) process it themselves instead of selling it as raw material. There are various types of seaweed that can be consumed either fresh, dried, cooked, or processed into powder, including:

1. **Nori:** A red algae processed into dry sheets and used for rolling sushi.
2. **Sea Lettuce:** A green nori that resembles lettuce, which can be consumed raw in salads or cooked as a soup ingredient.
3. **Kelp:** A brown algae processed and dried into sheets, also used as a raw material for gluten-free noodles.
4. **Kombu:** A type of seaweed with a strong flavor, commonly used for making soup stock.
5. **Arame:** A seaweed with a light, sweet taste and strong texture, which can be used in various dishes, including baked foods.
6. **Wakame:** A brown algae commonly used in fresh seaweed salads or soups.
7. **Dulse:** A red algae with a soft, chewy texture, used to add flavor to various dishes or eaten as a dried snack.
8. **Chlorella:** A green freshwater algae typically processed into supplements in powder form.
9. **Agar and Carrageenan:** Jelly-like substances commonly used as gelling and thickening agents in various food products.
10. **Spirulina:** A blue-green freshwater algae that can be eaten and sold in tablet, flake, or powder form. (Aryanti Muhtar Kusuma, 2020)

Barru Seaweed MSMEs need to focus more on product diversification, by developing processed seaweed-based products that have added value such as snacks can open new markets and increase the competitiveness of Barru products.

2. Price.

Pricing of seaweed products in Barru Regency currently depends on global market mechanisms. Prices often fluctuate, making it difficult for farmers and MSMEs to determine a stable profit margin. Some MSME actors stated that they often face price pressure from large traders, resulting in low profits.

The price set by seaweed MSMEs in Barru must cover all production costs incurred by the producer. Production costs consist of fixed costs (such as land or facility rent) and variable costs (such as labor, raw materials, and transportation). Setting a price that is too low will reduce profit margins and can be detrimental to business sustainability, while a price that is too high can reduce sales volume, especially if the target market is price sensitive. The Effect of Production Costs on Price Setting.

- If production costs increase, selling prices must also be adjusted so that MSMEs continue to make a reasonable profit. Therefore, it is important to conduct periodic cost analysis to adjust prices to market conditions.
- Lowering production costs (for example through efficiency or technology) can provide flexibility in pricing, allowing MSMEs to offer more competitive prices without sacrificing profit margins.

Many seaweed MSMEs in Barru rely on retailers to distribute their products. One of the challenges often faced is that retailers buy products at low prices and sell them at higher prices. Therefore, prices set by MSMEs must take into account prevailing market prices to maintain product competitiveness at the retailer level. Impact of Market Competition on Pricing:

- If the price is set too high compared to similar products from other regions, it will be difficult for Barru MSMEs to compete in the market. Conversely, if the price is too low, MSMEs will not be able to cover costs and get adequate margins.

- If Barru seaweed MSMEs can offer better quality or seaweed products that have added value (for example organic products, special processing, or attractive packaging), they can set a premium price that can be maintained, even though the price is higher than competitors.

In our opinion, if Barru MSMEs determines a pricing strategy, one of the pricing strategies that needs to be implemented by seaweed MSMEs in Barru is to consider price elasticity—that is, how much a price change will affect sales volume. If the demand for seaweed is very sensitive to price (elastic), even a small price reduction can significantly increase sales volume. Conversely, if the product is considered a necessity that is not too affected by price (inelastic), price changes may not affect demand too much. The Effect of Elasticity on Pricing is If the demand for seaweed from Barru is elastic, a lower pricing strategy can increase sales volume, which ultimately increases revenue even though the profit margin per unit is smaller, and If the seaweed product is more inelastic, MSMEs can set a higher price, because consumers are not very sensitive to price changes.

Gini Analysis (Balance between Price and Profitability)

In terms of price analysis using the Gini Index concept—which is usually used to measure inequality in income or wealth distribution—MSMEs can apply it to measure inequality in income determined based on price and profit distribution.

- If the price of seaweed is too high, most of the profits can be concentrated in large retailers who buy at low prices from MSMEs and sell them at high prices. This will cause inequality in the distribution of profits between MSMEs and retailers.
- If MSMEs can set more transparent prices and directly connect with end consumers, the distribution of profits will be more even. With a direct distribution model, greater profits will remain in the hands of producers and not just intermediaries or retailers.

Another a possible strategy is to form cooperatives or farmer associations that act as minimum price regulators. This has proven effective in several other regions to protect farmers from adverse price fluctuations.

3. Place

Barru has a geographical advantage with a coastline of around 78 km, which provides easy access to abundant natural resources in the form of seaweed. The existence of this potential should provide a great opportunity for MSMEs to produce seaweed in significant quantities, but the main challenge arises in the aspect of distribution which is still limited.

Although Barru is one of the producers of seaweed resources, the problem faced by most seaweed MSMEs in this area is

1. The lack of adequate transportation infrastructure, making product distribution more difficult and expensive. Without efficient transportation, logistics costs become higher, and delivery times are longer, which will ultimately affect the quality of seaweed products. For MSMEs with small or medium business scales, high distribution costs can reduce their profit margins, especially if they have to rely on shipping products through retailers who take additional profits.
2. Seaweed MSMEs in Barru are the unavailability of a direct distribution network connecting producers (seaweed farmers) with end consumers. Most distribution is done through intermediaries such as retailers or agents, which can cause several problems
 - Retailers often buy seaweed at a low price and sell it at a higher price, reducing the profit received by producers. With limited distribution networks, MSMEs tend to have less control over the price and quality of products in the market.

- **Non-Transparent Pricing** The presence of several intermediaries in the distribution channel makes pricing non-transparent. Producers do not always know how much they are selling to end consumers, which can reduce their profit margins. This also reduces the potential for MSMEs to set fairer and more competitive prices in the market.

To overcome this distribution problem, the local government and other related parties need to take steps to support seaweed MSMEs in Barru such as, Development and Improvement of Transportation Infrastructure, Development of Direct Distribution Channels E-commerce and go Digitalization, The government can also support the development of distribution networks by providing partnership programs between MSMEs and the private sector, such as logistics companies or large retailers. This partnership will open wider access to the market and facilitate product distribution, Training and Counseling for MSMEs to help MSMEs understand and implement more efficient distribution channels. This will help them to be more independent in distributing products to a wider market.

4. Promotion

Many seaweed MSMEs actors in Barru do not fully understand the potential and techniques of digital marketing, such as the use of social media or e-commerce platforms to promote their products. This is a major obstacle because in today's digital era, online-based promotion is one of the most effective ways to increase product visibility and reach a wider market. In addition, the introduction of seaweed products from Barru is still limited, and consumers often do not recognize the quality or characteristics of the product. Without clear branding and recognition of product quality, it is difficult for MSMEs to attract wider consumer interest, both in the domestic and international markets.

To increase the promotion of Barru seaweed products, a more targeted digital strategy needs to be implemented. The following is an analysis of promotional strategies that can be implemented:

1. Social media-based marketing can significantly increase product awareness, considering that many consumers are looking for information or new products through this platform. The use of local influencers or food bloggers can also help increase product exposure.
2. The development of a local marketplace that specializes in regional products, such as Barru seaweed, can also be a solution. This provides a special focus on local products and creates a more targeted market space.
3. Obtaining food quality or safety certification (such as organic certification or international quality standards) will help build consumer trust in the product. Consumer trust in a product is very important, especially in marketing products to a wider or international market. Strengthen branding and build a better reputation in the market.
4. The government or related institutions can hold training for MSMEs in Barru on digital marketing. This training can include the use of social media, creating attractive digital content, and using e-commerce platforms efficiently. This training will improve the ability of MSMEs to market their products and reduce dependence on traditional marketing methods.

The promotion strategy for Barru seaweed products requires a more modern approach by optimizing digital marketing. Although currently MSMEs still rely on traditional methods, the potential to expand market reach through social media platforms and e-commerce can be done. Training and education on digital marketing, as well as the addition of certification and labeling to distinguish Barru seaweed products from other products.

Answers to Research Questions

This study found that the application of the 4P marketing strategy is highly relevant to support the sustainability of seaweed MSMEs in Barru District.

1. Products: Product diversification is a key element to increase added value.
2. Price: Price protection through cooperatives or associations is necessary to maintain income stability.
3. Location: Strengthening distribution infrastructure and adopting digital technology can expand market access.
4. Promotion: Utilizing digital marketing is an effective strategy to increase product visibility in the global market.

Additional Factors

In addition to the 4P strategy, training and capacity building for MSME actors is an important element that needs attention. By providing training on product innovation, digital marketing, and business management, MSME players can be better prepared to face competition and utilize the great potential of Barru Regency.

Thus, the implementation of an integrated 4P marketing strategy, supported by innovation and training, can improve the competitiveness of seaweed MSMEs in Kabupaten Barru while encouraging the sustainability of the sector in the future.

CONCLUSION

The development of the seaweed-based Micro, Small and Medium Enterprises (MSMEs) sector in Barru Regency has great potential to support local economic growth and contribute to the national fisheries industry. By utilizing the 4P marketing strategy (Product, Price, Place, Promotion), MSMEs can improve their competitiveness and business sustainability in the face of global market challenges.

The 4P analytical framework proved relevant to identify the key needs of MSMEs in managing products, setting prices, expanding distribution networks, and improving promotions. However, implementing these strategies requires further support, such as institutional strengthening, infrastructure development, and adoption of digital technology. The findings confirm the importance of a holistic approach that focuses not only on marketing aspects but also includes human resource empowerment and product innovation.

In the future, further research could deepen the analysis:

1. Effectiveness of digital marketing strategies in increasing seaweed product visibility.
2. The role of local government policies in supporting the strengthening of the MSME sector in coastal areas.
3. Social and environmental impacts of seaweed sector development, including sustainability of coastal ecosystems.

ACKNOWLEDGEMENT

The authors would like to express their deepest gratitude to those who have provided support and contributions in the preparation of this research. Sincere appreciation is also given to the supervisors who have provided input in the preparation of this research. Last but not least, the

authors would like to express their appreciation to their family and closest friends for their moral support during the research and writing process. Hopefully this research can provide benefits for the development of the MSME sector and become the basis for further research in related fields.

REFERENCES

- Alamsyah, G. F. (2022). Pengaruh bauran pemasaran terhadap minat beli konsumen minyak goreng Kunci Mas pada PT. Sarimekar Cahaya Persada Sampit. *Eqien: Jurnal Ekonomi dan Bisnis*, 10(2), 88–100.
- Aryanti Muhtar Kusuma, D. G. (2020). *Manajemen Pemasaran Dinamika, Optimasi dan Aplikasi*. Yogyakarta: Diandra Kreatif/Mirra Buana Media.
- Badan Pusat Statistik Provinsi Sulawesi Selatan. (2019). *Sulawesi Selatan dalam angka 2019*.
- Badan Pusat Statistik Provinsi Sulawesi Selatan. (2020). *Sulawesi Selatan dalam angka 2020*.
- Badan Pusat Statistik Provinsi Sulawesi Selatan. (2021). *Sulawesi Selatan dalam angka 2021*.
- Badan Pusat Statistik Provinsi Sulawesi Selatan. (2022). *Sulawesi Selatan dalam angka 2022*.
- Badan Pusat Statistik Provinsi Sulawesi Selatan. (2023). *Sulawesi Selatan dalam angka 2023*.
- Fadli, M. R. (2021). Memahami desain metode penelitian kualitatif. *Humanika, Kajian Ilmiah Mata Kuliah Umum*, 21(1), 33–54. <https://doi.org/10.21831/hum.v21i1.38075>
- Gulo, E., Zebua, E., Mendrofa, Y., & Harefa, I. (2024). Analisis penerapan marketing mix dalam meningkatkan penjualan bahan bangunan di UD. Tokosa Kabupaten Nias Barat. *Innovative: Journal of Social Science Research*, 4(2), 3283–3297.
- Hendrawati, T. Y. (2016). *Pengolahan rumput laut dan kelayakan industrinya*. Jakarta: UMJ Press.
- Herawaty, H. (2020). Nilai-nilai personalitas entrepreneurship dan produktivitas usaha mikro rumput laut. *Oikos: Jurnal Kajian Pendidikan Ekonomi dan Ilmu Ekonomi*, 4(2), 117–125.
- Khumairoh, A., & Dewi, N. N. (2020). Strategi pemasaran dalam meningkatkan volume penjualan pada UMKM Takoto Jombang. *Jurnal Ilmiah Komputerisasi Akuntansi*, 13(1), 93–105.
- Kotler, P., & Keller, K. L. (2015). *Marketing management plus MyMarketingLab with Pearson EText -- Access Card Package*. Pearson Education.
- Mohajan, H. (2018). Qualitative research methodology in social sciences and related subjects. *Journal of Economic Development, Environment and People*, 7(1), 23–48.
- Rada, M. (2019). Strategi pemasaran di UMKM Kerupuk Ubi Ibu Riana dengan menggunakan metode promotion mix dan analytical hierarchy process (AHP) (Disertasi doktoral, Universitas Islam Negeri Sultan Syarif Kasim Riau).
- Rahayu, T., Syafril, S., Wekke, I. S., & Erlinda, R. (2019). Teknik Menulis Review Literatur dalam Sebuah Artikel Ilmiah.
- Riswanda, B. N., & Ernestivia, G. (2022). Strategi Pemasaran pada UMKM Family Cookies Trenggalek dalam Meningkatkan Penjualan. *Seminar Nasional Manajemen, Ekonomi dan Akuntansi*, Vol. 7. No. 1.
- Rusdi, R., Irwan, I. N. P., & Yani, F. I. (2023). Analisis status keberlanjutan budidaya rumput laut (*Eucaema cottonii*) di Kabupaten Barru: Metode modifikasi RAP-Seaweed. *Jurnal Pengelolaan Perikanan Tropis*, 7(2), 98–110.

- Rusman, M., Saiful, M., Mardin, F., & Bakri, I. (2018). Pendampingan penyusunan perencanaan produksi industri kecil menengah petani rumput laut di Kabupaten Barru. *Jurnal Tepat (Teknologi Terapan untuk Pengabdian Masyarakat, 1*, 49–61.
- Salma, Y. (2020). Strategi pemasaran usaha kecil menengah produk bumbu masak Meurasa di Banda Aceh (Skripsi, Universitas Islam Negeri Ar-Raniry).
- Umar, H. (2013). *Metode penelitian untuk skripsi dan tesis bisnis*. Jakarta: Raja Grafindo Persada.