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The marketing strategy of grouper fish in increasing fishermen's income in North Buton, Indonesia

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ABSTRACT

This study examines how marketing strategy can enhance the income of small-scale grouper fishermen (*Epinephelus* spp.) in North Buton Regency, Southeast Sulawesi, Indonesia, where high market demand for premium marine products has not been matched by proportional income gains at the producer level. Despite the increasing domestic and export demand for grouper fish, fishermen in coastal regions remain constrained by traditional marketing channels, limited bargaining power, and rising operational costs. Using a descriptive mixed-methods approach, this study analyzes primary data collected from 15 purposively selected grouper fishermen in Kulisusu District, complemented by secondary data from official statistics and peer-reviewed literature. Fishermen's income was assessed through cost–revenue analysis, and strategic priorities were formulated using an integrated SWOT framework, internal–External Factor Evaluation (IFE–EFE), and the Quantitative Strategic Planning Matrix (QSPM). The results show that the average net income of grouper fishermen is IDR 1,390,000 per month, indicating income vulnerability despite strong market demand. The SWOT and IE matrix results position the business in a "grow and build" quadrant, suggesting the feasibility of intensive strategies. QSPM analysis identified market penetration through increased catch efficiency while maintaining product freshness and quality as the most attractive strategy. This study contributes empirical evidence on small-scale fishery marketing strategies and provides practical insights for income improvement and sustainable coastal fishery development in eastern Indonesia.

Keywords: marketing strategy; grouper fish; fishermen income; SWOT analysis; QSPM; coastal fisheries

1. INTRODUCTION

Coastal fisheries remain a critical source of livelihood for millions of households in Indonesia, particularly in the eastern regions, where alternative income opportunities are limited and economic diversification is weak (Béné et al., 2016; Fabinyi et al., 2016). Although small-scale fisheries contribute significantly to national fish supply, fishermen have increasingly faced economic pressure due to rising operational costs, declining fish stocks, asymmetric market power, and limited access to profitable marketing channels (Allison et al., 2012; Bush et al., 2013). These challenges have become more pronounced in recent years as the demand for high-value marine commodities has grown; however, this increased demand has not translated into proportional income gains for primary producers at the household level (Ponte, 2019).

North Buton Regency, located in Southeast Sulawesi, represents a coastal area with substantial fisheries potential but persistent welfare challenges among fishing households. One of the most economically valuable species harvested in this region is grouper fish (*Epinephelus* spp.), a premium commodity widely demanded in domestic urban markets and international live fish trade networks, particularly in East Asia (Hendratno, 2013; Tadjuddah, 2012). Over the past decade, the demand for grouper fish has continued to increase, driven by rising seafood consumption, expansion of the restaurant and hospitality sector, and export-oriented fishery policies targeting high-value species (Asche et al., 2018; Steenbergen et al., 2020). Nevertheless, small-scale fishermen in North Buton remain largely dependent on traditional marketing arrangements dominated by intermediaries, resulting in weak bargaining power and limited income growth despite favorable market conditions (Fabinyi et al., 2016).

The gap between high market demand and relatively low fishermen income highlights a structural marketing problem rather than a production issue. Previous studies have shown that inefficient marketing systems, limited access to capital, inadequate cold-chain infrastructure, and the absence of strategic planning prevent fishermen from capturing greater value from high-priced marine commodities (Bush et al., 2013; Purcell et al., 2017). In many small-scale fisheries, fishermen are compelled to sell fresh fish immediately after landing at prices determined by collectors, regardless of market fluctuations, quality differentiation, or end-market prices. This reinforces income vulnerability and dependency relationships (Ponte, 2019).

Strategic marketing approaches offer a potential solution to this problem by enabling fishermen to systematically align their internal capabilities with external market opportunities. Marketing strategy frameworks such as SWOT analysis and the Quantitative Strategic Planning Matrix (QSPM) have been widely applied in agribusiness and fisheries contexts to identify priority strategies under resource constraints and uncertainty (David, 2013; Ramli, 2016). However, empirical applications of these tools at the small-scale fishermen level (particularly for high-value species such as grouper fish) remain limited, especially in eastern Indonesia, where marketing challenges are often discussed descriptively rather than through structured and strategic analysis.

Accordingly, this study aims to analyze the income structure of grouper fishermen in North Buton Regency and formulate an appropriate marketing strategy for increasing fishermen's income using an integrated SWOT–QSPM approach. By grounding the analysis in a specific coastal setting and focusing on small-scale fishermen, this study seeks to contribute empirical evidence to the fisheries marketing literature and provide actionable insights for policymakers and coastal community development programs.

Despite extensive research on fishery development and seafood marketing, several gaps remain. First, most existing studies on grouper fisheries emphasize production technology, aquaculture, or export networks, with limited attention to marketing strategy formulation at the small-scale capture fisheries level. Second, empirical applications of integrated SWOT–QSPM analysis in fisheries marketing are still scarce, particularly in under-researched coastal regions such as the North Buton Regency. Third, prior studies often discuss income challenges descriptively without systematically linking internal and external strategic factors to income improvements. This study addresses these gaps by providing a strategy-oriented empirical analysis of grouper fishery marketing using primary data from fishermen, thereby offering a context-specific contribution and practical decision-making framework for income enhancement.

Therefore, this study aims to (1) analyze the income level of grouper fishermen in North Buton Regency and (2) formulate an appropriate marketing strategy to increase fishermen's income using SWOT and QSPM approaches. The findings of this study are expected to contribute to fisheries marketing literature and provide practical recommendations for policymakers and coastal community development programs.

2. LITERATURE REVIEW

2.1. Marketing Strategy in Fisheries

Marketing strategy refers to a comprehensive plan designed to achieve organizational goals by effectively integrating product, price, place, and promotion decisions in response to market conditions (Kotler, 2005). In fisheries-based businesses, marketing strategy is particularly important due to the perishable nature of fish products, fluctuating supply, and dependence on natural conditions.

According to David (2009), strategic marketing involves analyzing internal strengths and weaknesses while simultaneously responding to external opportunities and threats. This perspective is highly relevant to small-scale fisheries, where limited resources require careful strategic prioritization. Previous studies have emphasized that effective fisheries marketing strategies can enhance fishermen's bargaining position, improve price stability, and increase income (Ginting & Salmiah, 2014).

2.2. SWOT Analysis as a Strategic Tool

SWOT analysis is widely used in strategic management to identify key internal and external factors affecting business performance. Strengths and weaknesses represent controllable internal factors, while opportunities and threats originate from the external environment (Rangkuti, 2007). In fisheries research, SWOT analysis has been applied to assess competitiveness, resource management, and marketing performance (Hendratno, 2013).

However, SWOT analysis alone does not indicate which strategy should be prioritized. Therefore, it is often combined with quantitative tools such as the Quantitative Strategic Planning Matrix (QSPM) to objectively rank strategic alternatives based on attractiveness scores (David, 2013).

2.3. Fishermen's Income and Determinants

Income is a key indicator of fishermen's welfare and is commonly defined as the difference between total revenue (TR) and total cost (TC). Fishermen's income levels are influenced by various factors, including catch volume, selling price, production costs, fishing technology, labor availability, and environmental conditions (Sukirno, 2006).

Several empirical studies have shown that small-scale fishermen often experience income instability due to seasonal fluctuations and market inefficiencies (Sastrawidjaya, 2002). Improving marketing efficiency and strategic positioning has been identified as one of the most effective approaches to enhancing fishermen's income without exerting excessive pressure on marine resources (Tadjuddah, 2012).

2.4. Previous Studies on Grouper Fisheries

Research on grouper fisheries highlights the high economic potential of this commodity alongside significant sustainability challenges. Hendratno (2013) emphasized that grouper fisheries development should be based on an agribusiness approach that integrates production, marketing, and institutional support. Similarly, Tadjuddah (2012) found that inefficient trade networks limit fishermen's access to export markets, thereby reducing income.

These studies suggest that improving marketing strategy is essential to maximizing the economic value of grouper fisheries. However, there remains limited empirical research focusing specifically on marketing strategy formulation at the small-scale fishermen level using integrated SWOT–QSPM analysis. This study seeks to fill this gap by providing evidence from North Buton Regency.

2.5. Marketing Strategy Concept

Marketing strategy refers to a long-term plan designed to achieve organizational objectives by effectively utilizing internal strengths to respond to external opportunities and threats (David, 2009). In fisheries businesses, marketing strategy determines how products are positioned, priced, distributed, and promoted in competitive markets (Kotler, 2005).

The strategic marketing process commonly follows the STP framework: segmentation, targeting, and positioning. Market segmentation involves identifying groups of consumers with similar characteristics, targeting focuses on selecting the most profitable segments, and positioning aims to create a distinctive image of the product in consumers' minds (Rangkuti, 2009).

2.6. SWOT and QSPM Analysis

SWOT analysis is a strategic planning tool used to identify internal strengths and weaknesses as well as external opportunities and threats (Rangkuti, 2007). To determine the most attractive strategic alternative, SWOT results can be integrated with QSPM, which quantitatively evaluates strategy attractiveness based on weighted internal and external factors (David, 2013).

3. METHODOLOGY

3.1. Research Design

This study employed a descriptive mixed-methods research design, combining quantitative income analysis with qualitative strategic assessment. The approach was selected to capture both measurable income outcomes and contextual strategic factors affecting grouper fisheries marketing.

3.2. Study Area and Unit of Analysis

The research was conducted in Kulisusu District, North Buton Regency, Southeast Sulawesi, Indonesia. The unit of analysis was individual small-scale fishermen engaged in grouper fishing activities.

3.3. Population and Sampling Technique

The study population consisted of 30 active grouper fishermen operating in the study area. A purposive sampling technique was applied to select respondents based on the following inclusion criteria: (1) actively engaged in grouper fishing during the study period, (2) selling catch through local marketing channels, and (3) willing to participate voluntarily. Based on these criteria, 15 fishermen were selected as respondents. This sample size represents 50% of the total population and is considered adequate for exploratory strategic analysis in small, homogeneous populations.

3.4. Data Collection Procedures and Timeline

Primary data were collected between August to December, 2025 using structured questionnaires and direct interviews. The questionnaires captured data on production volume, costs, selling prices, marketing practices, and perceived internal and external factors affecting the business. Secondary data were obtained from government publications, fisheries statistics, and peer-reviewed academic literature to contextualize findings.

3.5. Income Analysis

Fishermen's income was calculated as the difference between total revenue (TR) and total cost (TC):

$$I = TR - TC$$

where TR represents total monthly sales revenue and TC includes variable and fixed operational costs.

3.6. Strategic Analysis Tools

SWOT analysis was used to identify internal strengths and weaknesses as well as external opportunities and threats. These factors were quantified through Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) matrices. The resulting scores were positioned in the Internal–External (IE) matrix to determine strategic orientation. Finally, the Quantitative Strategic Planning Matrix (QSPM) was applied to rank alternative strategies based on Total Attractiveness Scores (TAS).

3.7. Bias Minimization

To minimize response bias, questionnaires were administered through face-to-face interviews to ensure clarity and consistency. Cross-checking was conducted between respondents' answers and observed fishing practices where possible. Secondary data were used to triangulate primary findings.

4. RESULT AND DISCUSSION

4.1. Socio-Demographic Characteristics of Respondents

The respondents involved in this study consisted of 15 grouper fishermen operating in Kulisusu District, North Buton Regency. All respondents were male, with an age range between 54 and 75 years. The majority had a low to moderate educational background, predominantly graduating from junior secondary school. These characteristics reflect the general profile of traditional fishermen in Indonesian coastal areas, where fishing skills are largely inherited across generations rather than acquired through formal education (Sastrawidjaya, 2002). Such demographic conditions have implications for technology adoption, access to market information, and strategic decision-making in fisheries businesses.

4.2. Analysis of Fishermen's Income

Based on the income calculation using the formula $I = TR - TC$, the total net income of all respondents reached IDR 20,850,000 per month, with an average net income of IDR 1,390,000 per fisherman per month. This income level indicates that grouper fishing provides an important source of livelihood; however, it remains relatively vulnerable when compared to regional minimum income standards and fluctuating operational costs.

Variations in income among fishermen were influenced by several factors, including average daily catch volume, fuel consumption, and the availability of labor. Fishermen with higher catch volumes (up to 5 kg per day) and access to additional labor tended to earn higher net income. This finding supports previous studies showing that production scale and efficiency significantly affect fishermen's earnings (Sukirno, 2006). High dependence on natural conditions and seasonal variability further increases income uncertainty, particularly for small-scale and traditional fishermen.

4.3. SWOT Analysis Results

The SWOT analysis provides a structured understanding of internal and external conditions affecting grouper fisheries in North Buton Regency.

Strengths identified include consistently high market absorption, meaning that nearly all grouper catches are sold without difficulty. Fishermen also benefit from regular customers and the natural quality of grouper fish, which is sold fresh without chemical preservatives. These strengths align note with the characteristics of premium seafood markets that prioritize freshness and product quality (Kotler, 2005).

Weaknesses primarily relate to production constraints, particularly the high cost and limited availability of raw materials such as wood and rattan used for fishing gear, expensive rehabilitation of damaged equipment, and limited working capital. Capital constraints reduce fishermen's ability to upgrade gear or adopt more efficient fishing technologies, a challenge commonly faced by small-scale fisheries (Rangkuti, 2009).

Opportunities arise from the consistently high demand for grouper fish in both domestic and export markets, as well as from the development of fishing technologies that could potentially increase productivity. Additionally, there is room for improving marketing promotion, especially through broader

distribution channels and institutional partnerships.

Threats include declining fish stocks, destructive fishing practices by other actors using bombs or poison, and increasing competition from fishermen equipped with more advanced technology. These external threats pose serious risks to resource sustainability and income stability, as also highlighted in previous fisheries management studies (Tadjuddah, 2012).

4.4. IFE, EFE, and IE Matrix Interpretation

The Internal Factor Evaluation (IFE) matrix produced a total weighted score of 3.45, indicating that the grouper fishing business in North Buton Regency is internally strong and capable of leveraging its strengths to mitigate weaknesses. The strongest internal factor was high market absorption, while limited capital emerged as the most critical weakness.

The External Factor Evaluation (EFE) matrix resulted in a weighted score of 3.55, suggesting a relatively favorable external environment despite existing threats. High market demand constituted the most significant opportunity, whereas declining fish populations represented the most serious threat.

Positioning the IFE and EFE scores within the Internal–External (IE) matrix placed the business in Quadrant I (grow and build). According to strategic management theory, organizations in this position should prioritize intensive strategies such as market penetration, market development, and product development (David, 2013).

4.5. QSPM and Strategic Priority Analysis

The Quantitative Strategic Planning Matrix (QSPM) was employed to objectively rank alternative strategies derived from the SWOT matrix. Four strategic alternatives were evaluated: (1) increasing catch volume while maintaining freshness (ST-1), (2) maintaining good relationships with existing customers (SO-2), (3) increasing promotional activities and expanding market areas (WT-1), and (4) maintaining and improving product quality (SO-1).

The results indicate that the ST-1 strategy achieved the highest Total Attractiveness Score (TAS = 6.85), making it the top strategic priority. This strategy emphasizes increasing production efficiency while preserving product freshness, which is crucial for maintaining high selling prices in premium fish markets. This finding is consistent with prior research emphasizing that supply consistency and freshness are key determinants of competitiveness in high-value fisheries (Hendratno, 2013).

The second-ranked strategy (SO-2) focuses on maintaining customer trust and long-term relationships, reflecting the importance of relational marketing in traditional fisheries markets. Meanwhile, promotional expansion (WT-1) ranked lower, indicating that demand-side constraints are less critical than supply-side limitations in the study area. Product quality improvement (SO-1), although important, was considered less urgent given that current product quality is already perceived as good by the market.

4.6. Discussion and Implications

Overall, the findings demonstrate that income improvement among grouper fishermen in North Buton Regency is more effectively achieved through production-oriented and efficiency-based strategies rather than aggressive promotional expansion. Increasing catch volume while maintaining freshness directly addresses both internal strengths and external opportunities, while simultaneously mitigating threats from competition.

However, successful implementation of this strategy requires institutional support, particularly in improving access to capital, enforcing regulations against destructive fishing practices, and providing technical assistance for sustainable fishing methods. Without such support, increased production efforts may exacerbate resource depletion risks. Therefore, strategic marketing improvements must be accompanied by sustainable fisheries management to ensure long-term income stability for coastal communities.

5. CONCLUSION

This study concludes that the most effective marketing strategy for increasing grouper fishermen's income in North Buton Regency is market penetration through increased catch volume combined with quality preservation. The average fishermen's income of IDR 1,390,000 per month can be improved by implementing this strategy alongside institutional support and sustainable fishing practices.

Ethical Approval

This study was conducted in accordance with generally accepted research ethics. Ethical approval was not required as the research involved non-invasive data collection through voluntary questionnaires.

Informed Consent Statement

All participants were informed of the research objectives, and informed consent was obtained prior to data collection. Participation was voluntary and confidential.

Authors' Contributions

Not applicable.

Disclosure Statement

No potential conflict of interest was reported by the author.

Data Availability Statement

The data presented in this study are available from the corresponding author upon reasonable request.

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Notes on Contributors

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