

# Exploring Competitive Advantage Strategies of Women Fish Processors at Depok Beach Using Porter's Five Forces Model

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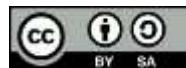
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## ABSTRACT

The present research examines strategies to enhance the competitive advantage of women-managed fish processing enterprises in Depok Beach, Bantul, where female entrepreneurs play a vital role in the coastal economy. Using Porter's Five Forces model and a descriptive qualitative approach, the research reveals a moderate level of competition. New entrants are easily accessible due to easy access to capital and simple technology. The threat of substitute products is exacerbated by serious concerns about food safety, which can shift consumer preferences. Although supplier and buyer bargaining power fluctuates due to input prices and product homogeneity, competition among existing competitors is mitigated by strong social interaction and a collective pricing system. To ensure sustainability and enhance competitiveness, this study recommends strategies focused on strengthening product differentiation, ensuring strict quality standards, particularly in food safety, expanding digital marketing, and leveraging cooperative networks to stabilize the supply chain and increase market power.

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## 1. INTRODUCTION

Depok Beach, located in Bantul Regency, Special Region of Yogyakarta (DIY), serves as one of the key nodes for small-scale capture fisheries and downstream processing that underpin the coastal economy. According to statistics published by BPS DIY, the capture fishery production of Bantul Regency reached approximately 467 tons, indicating a modest yet locally significant production scale [1]. Within this value chain, fish processing plays an essential role, and women's participation has become increasingly visible, with female

employment in the processing industry recorded at 19.30% as of February 2024 [2].

Women's participation in fisheries in Indonesia has been widely acknowledged in the literature, particularly in land-based post-harvest activities such as processing, packaging, and marketing. However, despite their critical role, women frequently encounter structural barriers in the form of restricted access to capital, technology, and marketing networks [3]. The provincial context reinforces this trend: data show that women account for 24.35% of employment in Sector A (agriculture, forestry, and fisheries) compared to 19.18% for men in February 2024,

illustrating their strong engagement in the primary sector in DIY.

National and international scholarship has consistently documented that, although women constitute a substantial share of the labour force in land-based segments of the fisheries value chain, their roles often remain underrecognized and undercompensated. Limited access to finance, technologies for value addition, and formal market linkages, along with institutional constraints such as certification barriers, shape the competitive capacity of women-led fish processing enterprises. Cross-country evidence further indicates that strengthening access to capital and markets, coupled with technical capacity-building, is positively associated with profitability, value-added upgrading, and livelihood resilience in coastal households [4].

Micro-level empirical studies from Depok Beach corroborate these structural observations. Recent findings by Nissa et al. [5] report that women fish processors face similar challenges, particularly in relation to formal financial access, limited processing technology, and difficulties in market expansion, as well as dependence on volatile local supply chains. Meanwhile, Sari et al. [6] highlight the role of locally embedded socio-cultural assets, such as informal networks, cooperatives, and women's collective solidarity, as a form of social capital that sustains enterprise continuity. These localised findings provide a grounded basis for analysing competitive strategy through a more systematic analytical framework.

To examine how women-led fish processing enterprises can build or sustain a competitive advantage, an industry structure approach such as Porter's Five Forces model serves as a suitable analytical lens. The model enables the identification of external pressures and opportunity spaces, including: how price-based competition in local markets affects profit margins; how substitutable manufactured or imported fish products influence consumer preferences; and how strengthening cooperative arrangements or quality certification can reduce buyer power and facilitate product differentiation.

Anchored in this empirical and theoretical foundation, the present study aims to explore and formulate context-specific strategies for developing competitive advantage among women fish processors at Depok Beach, thereby enhancing women's economic contribution in the small-scale fisheries sector while aligning with principles of social and environmental sustainability.

## 2. METHODS

This research employs a descriptive qualitative design to analyze the competitive advantage strategies of women fish processors at Depok Beach using Porter's Five Forces analysis framework. Porter's model is applied to identify and evaluate the five forces influencing the intensity of competition in the fish processing industry, namely [7]:

- 2.1 Threat of New Entrants: the potential emergence of new competitors that could disrupt market stability through ease of entry, capital barriers, or government regulations.
- 2.2 Bargaining Power of Suppliers: suppliers' increased negotiating power when their raw materials are difficult to replace or switching costs are high, forcing companies to seek solutions through vertical integration or strategic partnerships.
- 2.3 Bargaining Power of Buyers: indicates the strength of consumers' bargaining power when their purchase volume is significant, or when the product offered is a commodity (standard), giving them the ability to demand better prices and service.
- 2.4 Threat of Substitutes: refers to the availability of substitute products from other industries, limiting pricing flexibility, as consumers will switch if substitute products offer superior value (price or performance).
- 2.5 Rivalry among Existing Competitors: the primary force that dominates competition. Its intensity increases when the number of competitors is

large, market growth is slow, or product differentiation is low, which directly puts pressure on industry profit margins.

In addition, secondary data were obtained from official institutions such as the Central Statistics Agency (BPS) and the Bantul Regency Fisheries and Marine Service, which provided relevant information about local fish processing activities and women's business development programs.

### 3. RESULTS AND DISCUSSION

#### 3.1 Threat of New Entrants

Low barriers to entry pose a threat to new entrants to women-managed fish processing businesses in Depok Beach. Easy access to raw materials, low capital requirements, and financial support from cooperatives and local banks, such as Mina Bahari and BRI, make it simple for new competitors to start similar businesses. The use of simple processing technology, combined with the absence of strict regulations or licensing requirements, further increases the ease of market entry. This condition is also supported by the findings of Pangestika and Arifin[8], who noted that many UMKM actors in Depok Beach still lack awareness and understanding of halal certification, reflecting the relatively low regulatory enforcement in the area. As shown in the study by Sari et al.,[6] through the External Factor Evaluation (EFE) Matrix, the replication of similar products among producers reduces differentiation and intensifies price-based competition. Furthermore, the socio-economic profile of women fish processors, as described by Nissa et al.,[5] indicates that most are in the productive age group (30–50 years old) and have long experience in fish processing, which makes the necessary skills easily transferable within the community. These conditions collectively create an environment where new entrants can quickly emerge, challenging the market

stability and profitability of existing businesses.

The broader development of Depok Beach further amplifies this competitive pressure as part of Yogyakarta's National Tourism Strategic Area[9]. The expansion of tourism and culinary activities in the region has opened wider opportunities in the maritime economy, attracting new entrepreneurs to enter the seafood and fish processing sector. While this growth supports the local economy, it also heightens market saturation and competition, particularly as many new businesses tend to offer similar products. In addition, based on the research of Nuryadin et al.,[9] projections indicate that visitor numbers may decline after 2030 due to a decrease in beach attractiveness, which could further strain existing enterprises. To remain resilient, women fish processors need to strengthen product differentiation, ensure consistent quality through standard operating procedures (SOPs), and adopt innovative marketing and digital strategies to maintain customer loyalty and sustain competitiveness.

#### 3.2 Bargaining Power of Suppliers

The bargaining power of suppliers in fish processing businesses managed by women in Depok Beach depends on the supply of fresh fish and supporting raw materials, the prices of which fluctuate significantly. Sari et al.[6] suggests that the instability of key inputs, such as cooking oil and spices, directly increases production costs and constrains profit margins among small-scale processors. Similarly, findings from Putri et al.[10] suggest that the economic resilience of fishermen's households in Depok Beach largely relies on the productive roles of fishermen's wives—particularly in fish processing—which, in turn, strengthens their bargaining position in raw material acquisition. Furthermore, Marliyantoro et al.[11] report that small-scale fishermen in Depok experience structural economic marginalisation and

limited access to fishing zones. These systemic constraints not only suppress fishermen's income but also undermine the reliability of raw material supplies for women processors who depend on them for fresh fish.

This dependency enables suppliers and intermediaries to exert greater control over pricing and supply conditions. Although the availability of fresh fish remains relatively stable due to continuous local catches, the prices of auxiliary materials—such as oil, salt, and seasonings—are susceptible to market fluctuations and exchange rate volatility. The limited supplier base and the perishable nature of fish further heighten switching costs, making diversification of supply sources challenging without compromising product quality or production continuity. To mitigate such vulnerabilities, Sari et al.[6] recommend adaptive strategies, such as vertical integration and strategic collaboration.

In line with these recommendations, women fish processors have established partnerships with the Mina Bahari Cooperative, which provides both financial support and essential inputs, thereby reducing dependency on individual suppliers. In addition, the formation of women's processing groups has strengthened horizontal linkages, facilitating collective bargaining, bulk procurement, and shared access to production resources. These collaborative mechanisms collectively enhance economic resilience and contribute to the development of a more sustainable and equitable local fisheries supply chain.

### 3.3 Bargaining Power of Buyers

Empirical observations suggest that the bargaining power of buyers in women-led fish processing enterprises at Depok Beach remains moderate. The homogeneity of processed fish products and the predominance of micro-scale enterprises constrain producers' ability to differentiate

or set premium prices. As reported by Nissa et al.[5], women's processing activities at Depok Beach are largely traditional in nature, relying on simple technology and limited financial capacity, which restricts innovation and product diversification. Seasonal variations in fish supply further intensify this dependency, compelling women processors to adjust prices in response to market demand fluctuations. Nevertheless, consistent with the findings of Nissa et al.[5], the establishment of women's cooperative initiatives has begun to moderate buyer dominance by promoting collective price negotiation and enhancing market visibility.

Related community-based initiatives in the same area, such as marketing programs developed from culinary waste[12], also highlight the critical role of local cooperatives particularly Paguyuban Mina Bahari 45 in strengthening entrepreneurial capacity and promoting environmentally sustainable practices. These initiatives demonstrate that collective organisation and local institutional support can effectively reduce dependency on dominant buyers. Consistent with the findings of Nissa et al.[5] and Susanawati et al.[12], the establishment of women's cooperatives and group marketing initiatives has begun to moderate buyer dominance by promoting collective price negotiation and enhancing market visibility.

### 3.4 Threat of Substitutes

Evidence from Pertiwi et al.[13] indicates that both mackerel (*Rastrelliger*) and white snapper (*Lates calcarifer*) caught in Depok waters contain measurable levels of microplastics, particularly in the form of fragments, pellets, and films. The detection of these contaminants raises significant concerns about food safety and consumer health. This situation aligns with the findings of Dewanti et al.[14], who reported that food stall operators at Depok Beach face challenges in maintaining service quality and production efficiency. Such

market conditions, compounded by concerns over product quality and safety[13], potentially increase the threat of substitutes, as consumers may shift their preferences toward fish products from cleaner waters or alternative protein sources perceived as safer, such as freshwater fish, aquaculture products, or plant-based seafood alternatives.

The presence of microplastic contamination limits product differentiation and weakens consumer trust, thereby constraining pricing flexibility. In line with Dewanti et al.[14], collaborative efforts with cooperatives such as Mina Bahari 45 through improved production layouts, financial management, and service quality can enhance consumer satisfaction and operational resilience. To mitigate substitution risk, enterprises should strengthen product safety assurance through better raw material selection, transparent labelling, and sustainable sourcing practices, thereby maintaining competitiveness and consumer loyalty.

### 3.5 Rivalry among Existing Competitors

Rivalry among existing competitors in Depok Beach's coastal economy is relatively low, as most women-led fish-processing enterprises apply a collective pricing system, where local producers jointly agree upon product prices to avoid undercutting and unfair competition. This cooperative pricing arrangement reduces direct rivalry and promotes market stability among entrepreneurs operating within the same segment. Although Sari et al.[6] note that slow market growth and duplication of processed fish products could potentially increase competition, the cooperative pricing mechanism and strong social ties among entrepreneurs help mitigate such rivalry.

Market limitations and fluctuating demand still compel entrepreneurs to innovate in flavours, packaging, and promotional strategies to remain viable. Nevertheless, some women entrepreneurs

have attempted to shift their focus from price competition to increasing product added value, for example, by using fresh raw materials, modern packaging, and attractive brand labels. Social cohesion among fish processors also helps maintain cooperation, as some entrepreneurs prefer to collaborate on joint promotions or share production facilities. To strengthen business resilience, Sari et al.[6] recommend enhancing product differentiation, building a consistent local brand, improving packaging quality, and expanding marketing networks through digital platforms. These steps are crucial for maintaining business sustainability and increasing the competitiveness of women-managed fish-processing enterprises in Depok Beach.

## 4. CONCLUSION

Porter's Five Forces analysis reveals that women-led fish processing enterprises at Depok Beach face moderate competition, shaped by external pressures, but balanced by strong community cooperation. New entrants are easily accessible due to easy access to capital and simple technology. The threat of substitute products is exacerbated by serious concerns about food safety, which can shift consumer preferences. Although supplier and buyer bargaining power fluctuates due to input prices and product homogeneity, competition among existing competitors is mitigated by strong social interaction and a collective pricing system. To ensure sustainability and enhance competitiveness, this study recommends strategies focused on strengthening product differentiation, ensuring strict quality standards, particularly in food safety, expanding digital marketing, and leveraging cooperative networks to stabilize the supply chain and increase market power.

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