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Critical Success Factors and Strategic Priorities for Tuna Processing Agroindustry Competitiveness in Pacitan, Indonesia

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ABSTRACT

The competitiveness of tuna-processing agroindustries has become increasingly important in supporting the sustainability of fisheries-based small and medium enterprises (SMEs) amid evolving consumer preferences and market competition. This study aimed to identify the Critical Success Factors (CSFs) influencing the competitiveness of tuna-processing agroindustries and to formulate strategic priorities for business improvement in Pacitan Regency, East Java, Indonesia. A quantitative descriptive approach was employed using primary data collected from 70 respondents, comprising 20 enterprise representatives (owners, managers, and production workers) and 50 consumers. Data were obtained through direct observation, structured interviews, and questionnaire surveys using a seven-point Likert scale. Critical Success Factor analysis was combined with stakeholder perception difference analysis, comparing enterprise and consumer importance ratings for each competitive attribute, to identify areas of stakeholder misalignment and establish strategic priorities for competitiveness enhancement. The relatively small differences suggest that enterprise and consumer respondents assigned similar levels of importance to these attributes, although this descriptive comparison does not establish statistical agreement. However, substantial differences were observed for expiration date information, product innovation, and stock availability, suggesting that consumer expectations in these areas have not yet been fully accommodated by current business practices. Based on these findings, four strategic priorities were formulated, namely strengthening food safety assurance, promoting continuous product innovation, improving supply chain and inventory management, and maintaining consistent product quality. This study extends the application of the Critical Success Factor framework by integrating producer and consumer perspectives to evaluate agroindustry competitiveness and provides evidence-based recommendations for enterprise managers and policymakers to enhance the long-term competitiveness of tuna-processing SMEs.

INTRODUCTION

The fisheries sector serves as a strategic pillar supporting global food security, economic growth, and the livelihoods of coastal communities. Amid the rising demand for high-quality aquatic products, downstream fisheries industrialization has gained significant traction for its ability to generate added value, create employment, and enhance market competitiveness. For developing nations, transitioning from raw commodity exports to high-value processed seafood is a crucial strategy to strengthen economic resilience within a

sustainable blue economy framework (Negara et al., 2025). Consequently, improving the competitiveness of fish-processing agroindustries has emerged as a primary focus for maximizing the economic potential of marine resources sustainably (Napitupulu et al., 2022; Negara et al., 2026; Southeast Asian Fisheries Development Center, 2025; Suryana & Amalia, 2021).

As one of the world's largest tuna producers, Indonesia possesses substantial comparative advantages due to its strategic geographical position (Abdullah et al., 2025; Dina et al., 2026). The government consistently promotes fisheries downstreaming through product diversification and quality standardization. Nevertheless, the processing sector remains hindered by structural constraints, including limited processing capacity, inadequate cold-chain infrastructure, logistical challenges, low technology adoption, and restricted market access. These barriers directly diminish the ability of Small and Medium Enterprises (SMEs) to compete effectively (Abdillah & Al-Amin, 2025; Southeast Asian Fisheries Development Center, 2025).

Regionally, Pacitan Regency has an established fisheries-processing sector, including tuna-based processed products that contribute to local economic activities. Previous research specifically conducted in Pacitan demonstrated the economic feasibility of tuna-processing enterprises and highlighted the importance of continued development of local fish-processing activities (Deswati & Hikmah, 2016). However, competitiveness in fisheries-based agroindustries is increasingly influenced by broader challenges, including raw material supply, product quality, innovation, supply-chain management, and changing consumer preferences (Southeast Asian Fisheries Development Center, 2025; Suseno et al., 2025). These challenges may affect the ability of small and medium-sized tuna-processing enterprises to respond effectively to market demands. Therefore, identifying the factors that are considered critical by both enterprises and consumers is essential for developing more targeted competitiveness strategies in Pacitan.

Agroindustry competitiveness depends not only on production efficiency but also on managerial capabilities in addressing Critical Success Factors (CSFs), the vital strategic areas essential for organizational success (Rockart, 1979). In the food industry, CSFs typically encompass product quality, taste, price, packaging, innovation, and supply continuity (Fauzi et al., 2026; Suseno et al., 2025). To optimize the limited resource allocation of SMEs, CSF analysis must be integrated with Gap Analysis to measure the distance between stakeholder expectations and actual field performance.

Previous research in Pacitan has examined the value chain of tuna-processing agroindustries and identified critical factors from the perspectives of agroindustry actors and consumers (Fauzi et al., 2019). Other studies have examined the technological and financial feasibility of tuna-processing businesses in Pacitan (Deswati & Hikmah, 2016), while recent research at the national level has focused on broader performance improvement and quality-management mechanisms for fish-processing SMEs (Suseno et al., 2025). Building on these studies, the present research focuses specifically on translating differences in stakeholder priorities into a structured set of strategic priorities for competitiveness enhancement. Thus, the contribution of this study lies not in introducing CSF or gap analysis as new analytical concepts, but in using stakeholder differences to provide a more focused basis for managerial prioritization in tuna-processing agroindustries in Pacitan.

Against this background, this study aims to: (1) identify the Critical Success Factors influencing the competitiveness of the tuna-processing agroindustry in Pacitan Regency; (2) analyze the performance gaps across the identified competitive attributes; and (3) formulate strategic managerial priorities to enhance the competitiveness and long-term sustainability of tuna-processing SMEs.

METHOD

Study Area and Sampling Design

This study employed a descriptive quantitative research design and was conducted in Pacitan Regency, East Java Province, Indonesia. Two tuna-processing SMEs, UD. Eza Mandiri and UD. Putra Samudra, were selected using purposive sampling based on their established tuna-processing activities and marketing networks. Snowball sampling was subsequently used to identify respondents within the enterprises' stakeholder networks. The initial seed respondents were identified through direct contact with the selected enterprises and consisted of individuals who were directly involved in their tuna-processing activities. These respondents subsequently recommended other eligible individuals within their respective business networks until the predetermined respondent composition was achieved. For the consumer group, respondents were included if they had purchased and consumed processed tuna products from at least one of the selected enterprises and were willing to participate in the survey. Recruitment continued through referrals from eligible consumer respondents until 50 consumers were obtained. Consumers were not required to have purchased from both enterprises; therefore, the consumer responses represent purchasing perceptions associated with the selected tuna-processing enterprises generally rather than a direct comparison between the two enterprises. The study involved 70 respondents, comprising 20 internal enterprise stakeholders (owners, managers, and workers) and 50 consumers. The internal stakeholder group was used to assess production management and business strategies, whereas the consumer group was used to assess purchasing preferences regarding processed tuna product attributes. Because snowball sampling may overrepresent respondents who are socially or commercially connected to the initial seeds, the resulting sample may be subject to network-selection bias. This limitation was considered when interpreting stakeholder perceptions and strategic priorities.

Data Collection and Research Instrument

Primary data were gathered through participant observation, in-depth interviews with management, and structured questionnaire surveys. The questionnaire was designed to measure respondents' perceptions of 11 competitive attributes of seafood processing agroindustries, adapted from previous literature (Suryana & Amalia, 2021; Suseno et al., 2025). These attributes were evaluated using a 7-point Likert scale, ranging from 1 (Very Unimportant/Very Poor) to 7 (Very Important/Excellent). The detailed variables and indicators are presented in Table 1. Secondary data were compiled from government reports, regional fisheries statistics, and relevant scientific publications.

Table 1. Research Variables and Indicators of Tuna Agroindustry Competitiveness

No	Variable	Indicator
1	Product Attributes	Color, Aroma, Taste
2	Product Characteristics	Size, Expiration date
3	Market Attributes	Price, Packaging
4	Operational Capability	Stock availability, Quality
5	Strategic Capability	Innovation, Business location

Data Analysis and Strategic Priority Formulation

Descriptive statistical analysis was applied to summarize respondent characteristics and calculate mean perception scores. The data analysis followed three integrated steps:

1. Critical Success Factor (CSF) Analysis: The relative importance of each competitive attribute was determined by calculating the mean score of respondents' assessments (Nguyen et al., 2023). Attributes with the highest mean scores were identified as Critical Success Factors that substantially influence the competitiveness of tuna-processing agroindustries (Rockart, 1979; Suseno et al., 2025).
2. Stakeholder Perception Difference Analysis: Stakeholder perception difference analysis was conducted to compare the importance ratings assigned by enterprise respondents and consumers for each competitive attribute. Because the study collected perceived importance ratings rather than independent measures of actual operational performance, the analysis

does not represent an importance–performance analysis. Instead, the difference between stakeholder groups was calculated to identify areas where consumer expectations differed from enterprise priorities. The difference for each attribute was calculated using the following formula:

$$Difference = Consumer\ Importance - Enterprise\ Importance$$

A positive difference indicates that consumers assigned greater importance to an attribute than enterprise respondents, whereas a negative difference indicates that enterprises assigned greater importance than consumers. Attributes with relatively large positive differences were interpreted as areas of stakeholder misalignment and were subsequently considered in formulating strategic priorities. Attributes with small differences indicated relatively strong alignment between enterprise and consumer perceptions.

3. Strategic Priority Analysis: Strategic priorities were determined from the stakeholder perception difference calculated as Consumer Importance - Enterprise Importance. Predefined difference thresholds were used to ensure reproducible classification: Priority I for differences ≥1.00, Priority II for 0.50–0.99, Priority III for 0.20–0.49, Monitor for 0.10-0.19, and Maintain for differences <0.10. Positive differences indicate that consumers assigned greater importance to an attribute than enterprise respondents, whereas negative differences indicate the opposite. Mean importance scores were subsequently used to contextualize the strategic relevance of each attribute (Grant, 2022; Kaplan & Norton, 2008).

RESULT AND DISCUSSION

Respondent Characteristics

A total of 70 respondents participated in this study, comprising 20 enterprise respondents and 50 consumers. Enterprise respondents consisted of business owners, managers, and production workers from two leading tuna-processing agroindustries in Pacitan Regency, namely UD. Eza Mandiri and UD. Putra Samudra. Consumer respondents represented individuals who had purchased processed tuna products produced by these enterprises. The inclusion of both respondent groups enabled this study to capture competitiveness from two complementary perspectives: internal business priorities and external market expectations (Negara et al., 2024). Such a dual-perspective approach provides a more comprehensive basis for identifying Critical Success Factors (CSFs) that support the competitiveness of tuna-processing agro-industries.

Table 2. Demographic Characteristics of Enterprise and Consumer Respondents

Characteristics	Enterprise Respondents (%)	Consumer Respondents (%)
Age (years)		
<30	20	34
30–40	50	28
41–50	20	22
51–60	10	16
Education Level		
Elementary School	10	0
Junior High School	25	20
Senior High School	30	38
University	35	42

Source: Processed Data (2025)

The demographic distribution indicates that both enterprise management and consumer markets are dominated by individuals within the productive age group. Among enterprise respondents, 50% were between 30 and 40 years old, indicating that most managerial and production decisions are made by economically active individuals with considerable operational experience. Meanwhile, the largest proportion of consumers (34%)

was younger than 30 years, followed by those aged 30–40 years (28%). This demographic profile suggests that processed tuna products primarily target consumers of productive age who generally possess higher purchasing power and greater awareness of product quality, convenience, and food safety.

The educational profile further demonstrates that both respondent groups possess relatively favourable educational backgrounds. Among enterprise respondents, 35% had completed university education, while 30% had graduated from senior high school. Similarly, university graduates represented the largest proportion of consumers (42%), followed by senior high school graduates (38%). Higher educational attainment is commonly associated with increased awareness of food quality, nutritional value, product safety, and purchasing decisions. Consequently, enterprises are increasingly required to maintain consistent product quality, provide accurate product information, and continuously improve innovation to satisfy the expectations of a more informed consumer market. Similar observations have been reported in previous studies, which indicate that consumer knowledge positively influences purchasing behaviour and encourages seafood-processing enterprises to improve quality management and product competitiveness (Suryana & Amalia, 2021; Suseno et al., 2025).

From the enterprise perspective, the predominance of respondents within productive age groups and relatively high educational attainment reflects favourable human capital for supporting business development (Fadlullah et al., 2026). Human resources with adequate educational backgrounds are generally more capable of adopting technological innovations, implementing standardized production procedures, and responding to changing market conditions. These characteristics are particularly important for small- and medium-scale agroindustries, where managerial capability and operational flexibility largely determine business sustainability and competitiveness.

From the consumer perspective, the demographic profile indicates a market characterized by relatively young and educated buyers who tend to evaluate products using multiple criteria rather than relying solely on price. Contemporary consumers increasingly consider sensory quality, food safety, packaging, nutritional value, convenience, and product credibility before making purchasing decisions. This behavioural shift implies that maintaining competitiveness requires enterprises to adopt customer-oriented strategies that extend beyond production efficiency toward continuous quality improvement and value creation.

Overall, the demographic characteristics presented in Table 2 indicate that the competitiveness of tuna-processing agroindustries should be viewed as the outcome of interactions between enterprise capability and evolving consumer expectations. Product competitiveness is therefore influenced not only by internal production performance but also by the extent to which enterprises successfully understand and respond to market preferences. This finding provides an important foundation for the subsequent analysis of Critical Success Factors, which identifies the business attributes considered most influential in strengthening the competitiveness of tuna-processing agroindustries in Pacitan Regency.

Critical Success Factors Influencing Tuna Processing Agroindustry Competitiveness

Critical Success Factors (CSFs) were assessed to determine the competitive attributes considered most important by enterprise representatives and consumers (Alfoqahaa, 2018). Eleven attributes were evaluated using a seven-point Likert scale. Higher scores indicated greater perceived importance in supporting the competitiveness of tuna-processing agroindustries. Table 3 presents the comparative importance scores assigned by both stakeholder groups.

Table 3. Importance Assessment of Critical Success Factors

Rank*	Critical Success Factor	Enterprise Mean	Consumer Mean	Perception Gap
1	Taste	6.70	6.74	0.04
2	Quality	6.64	6.71	0.07
3	Price	6.41	6.23	0.18

Rank*	Critical Success Factor	Enterprise Mean	Consumer Mean	Perception Gap
4	Expiration date	5.34	6.57	1.23[1]
5	Product innovation	5.31	5.86	0.55
6	Product size	5.54	5.59	0.05
7	Product color	5.48	5.61	0.13
8	Packaging	5.47	5.53	0.06
9	Aroma	5.37	5.48	0.11
10	Stock availability	5.22	5.71	0.49
11	Business location	5.20	5.37	0.17

*Ranking is based primarily on consumer importance scores because consumers represent the final market determining purchasing decisions.
Source: Processed Data (2025)

The findings indicate that taste, product quality, and price were consistently rated as the most important competitive attributes by both enterprise respondents and consumers, demonstrating a strong alignment between managerial priorities and market expectations. Taste obtained the highest score from both stakeholder groups, confirming that sensory quality remains the principal determinant of consumer acceptance and repeat purchasing behaviour. Likewise, the high rating for product quality reflects growing consumer awareness of hygiene, freshness, and food safety, emphasizing the importance of standardized production practices.

By contrast, consumers assigned considerably higher importance to expiration date information, product innovation, and stock availability than enterprise respondents. These differences suggest that although enterprises have successfully maintained core product attributes, several market-oriented aspects have not yet received equivalent managerial attention. Expiration-date labeling has become an increasingly important indicator of food safety and product reliability, whereas innovation and product availability represent consumers' expectations for diversified products and consistent market access. Similar findings have been reported in previous studies, indicating that innovation capability and food safety assurance are increasingly important determinants of competitiveness in fisheries-based SMEs (Suryana & Amalia, 2021; Suseno et al., 2025).

The remaining attributes, including product color, packaging quality, aroma, product size, and business location, received relatively similar evaluations from both stakeholder groups and exhibited only minor differences. Although these attributes contribute to consumers' purchasing experiences, they were not identified as the principal determinants of competitiveness. Overall, the findings demonstrate that competitiveness in tuna-processing agroindustries is primarily influenced by product quality, sensory characteristics, food safety assurance, and innovation, providing the basis for the subsequent strategic priority assessment.

Stakeholder Perception Differences and Strategic Priorities

The stakeholder perception difference analysis identified the extent to which enterprise and consumer priorities diverged across the 11 competitive attributes (Table 4). The difference was calculated as the consumer importance score minus the enterprise importance score. Positive values therefore indicate attributes that consumers considered more important than did enterprise respondents, while negative values indicate the opposite.

Table 4. Strategic Priorities Based on Stakeholder Perception Differences

Rank	Critical Success Factor	Enterprise Mean	Consumer Mean	Difference†	Strategic Priority
1	Expiration date	5.34	6.57	1.23	Very High
2	Product innovation	5.31	5.86	0.55	High
3	Stock availability	5.22	5.71	0.49	High
4	Price	6.41	6.23	0.18	Moderate
5	Business location	5.20	5.37	0.17	Moderate

Rank	Critical Success Factor	Enterprise Mean	Consumer Mean	Difference†	Strategic Priority
6	Product color	5.48	5.61	0.13	Low
7	Aroma	5.37	5.48	0.11	Low
8	Product quality	6.64	6.71	0.07	Low
9	Packaging	5.47	5.53	0.06	Low
10	Product size	5.54	5.59	0.05	Very Low
11	Taste	6.70	6.74	0.04	Very Low

†Difference = absolute difference between enterprise and consumer importance scores.
Source: Primary Data (2025)

Expiration date showed the largest positive difference (1.23), followed by product innovation (0.55) and stock availability (0.49). These results indicate the greatest divergence between consumer expectations and enterprise priorities and therefore represent the most important areas for strategic attention. The relatively large difference for expiration date suggests that consumers place greater emphasis on information related to product shelf life and safety than enterprise respondents. Similarly, the differences for product innovation and stock availability indicate that consumers place greater importance on product variety and reliable product availability than is reflected in enterprise priorities.

In contrast, taste (0.04), product size (0.05), packaging quality (0.06), and product quality (0.07) showed very small differences between the two stakeholder groups. These results indicate relatively strong alignment in perceived importance. Price was the only attribute with a negative difference (−0.18), indicating that enterprise respondents assigned slightly greater importance to price than consumers. Overall, the analysis suggests that strategic attention should focus primarily on attributes with the largest positive stakeholder differences, particularly expiration date information, product innovation, and stock availability, while attributes with small differences should be maintained as existing competitive strengths.

Strategic Implications for Competitiveness Enhancement

Figure 2 illustrates the strategic framework developed from the integration of the Critical Success Factor assessment and stakeholder perception difference analysis. The framework highlights that competitiveness can be strengthened by focusing managerial resources on priority attributes with the greatest discrepancies between enterprise practices and consumer expectations.

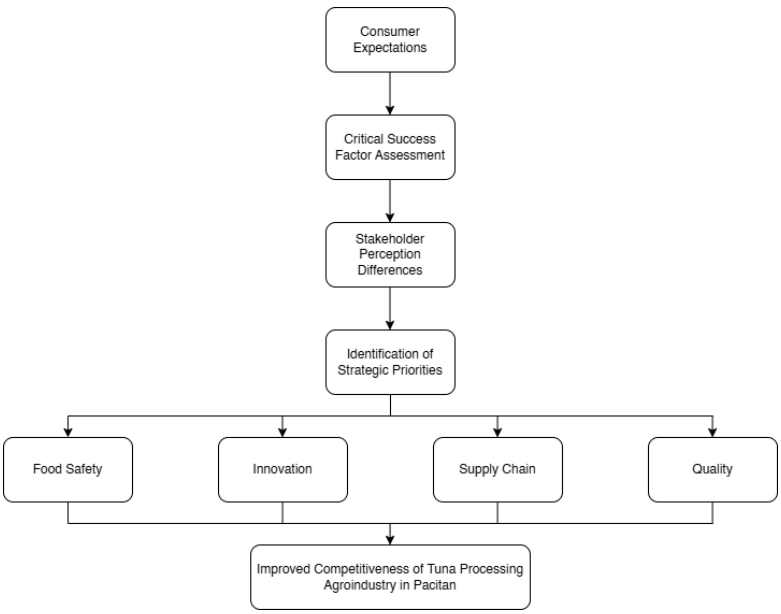


Figure 2. Strategic Framework for Improving Tuna Processing Agroindustry Competitiveness

Source: Primary Data (2025)

Table 5. Strategic Priorities for Tuna Processing Agroindustry Competitiveness

Strategic Focus	Recommended Actions	Expected Outcomes
Food safety and product assurance	Standardize expiration-date labeling, improve product traceability, provide clear storage instructions, and strengthen quality assurance procedures.	Increased consumer confidence, compliance with food safety standards, and improved product credibility.
Product innovation and value creation	Develop new tuna-based product variants, improve packaging design, and introduce value-added products targeting different consumer segments.	Greater product differentiation, expanded market opportunities, and improved business competitiveness.
Supply chain and inventory management	Strengthen coordination with fishermen and suppliers, improve inventory planning, and optimize cold-storage utilization.	More stable product availability, reduced stock shortages, and improved customer satisfaction.
Quality consistency and market orientation	Maintain standardized production procedures, conduct regular quality evaluation, and strengthen customer feedback mechanisms.	Consistent product quality, higher customer loyalty, and sustainable competitive advantage.

Source: Processed Data (2025)

The strategic framework suggests four complementary priorities for improving competitiveness. First, enterprises should strengthen food safety assurance by implementing standardized expiration-date labeling and improving product traceability. Second, continuous product innovation should be encouraged through product diversification and packaging improvements to increase market attractiveness. Third, better supply chain and inventory management is required to reduce seasonal shortages and improve product availability. Finally, maintaining consistent product quality through standardized operating procedures and regular quality evaluation remains essential for preserving customer trust and long-term competitiveness.

Taken together, these strategies demonstrate that sustainable competitiveness depends not only on production efficiency but also on the integration of quality management, innovation, supply chain coordination, and customer-oriented decision-making. Consequently, future development programs should support both technological improvements and managerial capability among tuna-processing SMEs.

CONCLUSION

This study identified the Critical Success Factors (CSFs) and strategic priorities influencing the competitiveness of tuna-processing agroindustries in Pacitan Regency, Indonesia. The findings indicate that taste, product quality, and price remain the principal competitive attributes shared by enterprise representatives and consumers, whereas expiration-date information, product innovation, and stock availability represent the largest differences in stakeholder priorities. These findings suggest that strengthening food safety assurance, encouraging continuous innovation, improving supply chain coordination, and maintaining consistent product quality should become the primary strategies for enhancing competitiveness. Theoretically, this study extends the application of the Critical Success Factor

framework by integrating enterprise and consumer perspectives into competitiveness assessment. Practically, the proposed strategic framework provides evidence-based guidance for enterprise managers and policymakers in developing quality assurance, innovation, and SME development programs. Although limited to two tuna-processing enterprises in Pacitan Regency, this study offers a useful foundation for future research involving broader geographical coverage, objective business performance indicators, and advanced analytical approaches such as Structural Equation Modeling (SEM) to further validate the proposed competitiveness framework.

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