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Analysis of Internal and External Factors in the Business Development Strategy of Moringa SMEs in East Nusa Tenggara

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Abstract: Growing consumer preference for healthier lifestyles has created both opportunities and challenges for micro, small, and medium enterprises (MSMEs) producing natural-based products. This study examines the moringa-based MSME industry in East Nusa Tenggara (NTT), Indonesia, to identify the internal and external factors influencing business development and to formulate appropriate strategies. Data were collected through interviews and questionnaires involving MSME owners, employees, and government representatives. The findings indicate that abundant raw material availability is the industry's primary strength, whereas limited financial capital and restricted access to financing remain major constraints. Externally, the healthy lifestyle trend presents significant market opportunities, while increasing quality requirements from consumers and business partners represent key challenges. The results suggest that strengthening regional product branding and developing innovative moringa-based products are the most appropriate strategies to enhance competitiveness, maintain market position, and support the long-term sustainability of moringa-based MSMEs.

Keywords: Business Development, EFE, IFE, SMEs, SWOT analysis.

INTRODUCTION

The COVID-19 pandemic has significantly influenced consumers' perceptions of healthy food and food safety (Chiu et al., 2022). At the same time, the increasing prevalence of non-communicable diseases, including obesity, diabetes, and cardiovascular disease, has accelerated changes in dietary habits and beverage consumption. As a result, consumers have become more selective in choosing foods that are not only enjoyable to consume but also nutritionally balanced, safe, and capable of supporting long-term health. Growing awareness of healthy lifestyles has encouraged people to recognize the importance of healthy eating and drinking habits in maintaining their immune systems. This shift in consumer behavior has increased demand for products derived from natural ingredients, creating opportunities for food and beverage businesses to develop healthier product variants with balanced nutritional content using naturally processed raw materials. Nutritional information displayed on food labels, particularly nutrition facts, has become an important consideration for consumers when

selecting healthier food products, including in Indonesia (König et al., 2025). Reflecting this trend, Mordor Intelligence (2025) projects that the Indonesian plant-based food and beverage market will continue to experience substantial growth. The market is expected to increase from USD 95.07 billion in 2026 to USD 166.43 billion by 2031, representing a compound annual growth rate (CAGR) of 11.85%.

This projection indicates considerable opportunities for the development of locally sourced healthy food products. The rapid expansion of the healthy food market has also created promising opportunities for enterprises operating in the plant-based food sector. As one of the key sectors within micro, small, and medium enterprises (MSMEs), the food industry encompasses business activities related to food production, processing, distribution, and trade. In Indonesia, particularly in East Nusa Tenggara (NTT), food-based MSMEs have considerable potential to utilize locally available natural resources. This potential is reflected in the province's economic structure, where the agriculture, forestry, and fisheries sector accounted for 28.42% of the regional Gross Regional Domestic Product (GRDP) in 2024 (BPS NTT, 2024). The sector has encouraged local communities to recognize the economic value of agricultural resources and develop value-added products based on locally available commodities. Among these commodities, moringa has emerged as one of the most promising resources for the development of food-based MSMEs.

According to (Mune et al., 2016), *Moringa oleifera* is a perennial tree that is widely cultivated because of its remarkable adaptability to dry climates and poor soil conditions. In addition, Kurniawan et al. (2020) reported that moringa leaves possess various medicinal properties and have been used to help manage hypertension, diabetes, cardiovascular diseases, liver and digestive disorders, as well as to improve erectile function. Owing to its rich nutritional composition and health-promoting properties, moringa has considerable potential to be developed into value-added food products. Therefore, strengthening innovation in moringa-based products is essential to enhance their competitiveness and enable them to compete more effectively with other agricultural products.

The moringa industry also offers substantial business opportunities in East Nusa Tenggara. According to the Regional Agriculture Office (Distankp, 2023), moringa production in the province reached 68.55 tons, with a productivity level of approximately 305 kg. In addition to the availability of raw materials, the provincial government's involvement in implementing stunting prevention programs has further increased the demand for moringa as a nutritious local food source. The growing popularity of healthy lifestyles and natural food products has also strengthened market prospects for moringa-based products. From an economic perspective, fresh moringa leaves are sold at approximately IDR 3,000 per kilogram, while dried leaves range from IDR 25,000 to IDR 50,000 per kilogram, depending on product quality and market location. Furthermore, exports of moringa powder generated approximately IDR 217.89 billion in foreign exchange earnings during the January–September 2024 period (BSIP, 2025). These conditions indicate that moringa possesses strong economic potential and provides promising opportunities for communities in NTT to establish and expand businesses within the moringa-based processing industry.

Current market projections indicate that global demand for moringa continues to increase, with estimated requirements reaching 1–3 tons per month. However, local farmers in East Nusa Tenggara are only able to produce approximately 300–500 kg per month, leaving a substantial portion of the demand to be supplied by producers from outside the province. This imbalance between production capacity and market demand suggests that significant market opportunities remain available for the local moringa industry. At the same time, it presents a major challenge for both moringa-based MSMEs and government stakeholders to develop effective strategies that can increase production capacity, satisfy market demand, and strengthen the competitiveness of locally produced moringa products.

Despite its considerable market potential, the development of moringa-based MSMEs continues to face several strategic challenges, including intense market competition, the need for continuous product diversification, evolving consumer preferences, limited resources, complex regulatory requirements, inefficient distribution networks, restricted market access, inadequate business capital, and weak product branding. These challenges are consistent with previous studies (Munandar, 2016; Vu et al., 2022; Singh & Kumar, 2020), which identified limited access to finance, insufficient human resource capacity, low technology adoption, and distribution constraints as key barriers that hinder MSMEs from improving their competitiveness.

Because these challenges arise from the interaction between internal business capabilities and external environmental conditions, addressing them requires a comprehensive strategic assessment rather than focusing solely on individual operational issues. Porter's Diamond Model provides an appropriate analytical framework for examining how internal capabilities and external environmental conditions collectively influence industrial competitiveness. Furthermore, integrating the Internal Factor Evaluation (IFE), External Factor Evaluation (EFE), Internal–External (IE) Matrix, and SWOT analysis enables a systematic process for translating competitiveness assessment into strategic recommendations.

Although previous studies have discussed various factors affecting MSME competitiveness, most have focused on MSMEs in general or examined only specific aspects such as financing, marketing, technology adoption, or supply chain management. Limited attention has been given to the moringa-based MSME industry, particularly in East Nusa Tenggara, where abundant local resources create unique opportunities and challenges for business development. Furthermore, studies integrating Porter's Diamond analysis with the IFE, EFE, IE Matrix, and SWOT framework to formulate strategic recommendations for this industry remain limited. Unlike previous studies that generally employed these strategic tools independently, this study integrates Porter's Diamond Model with the IFE, EFE, IE Matrix, and SWOT framework into a sequential analytical process. This integration provides a comprehensive framework linking competitiveness assessment, strategic positioning, and strategy formulation within a single analytical approach. Consequently, this study contributes to the strategic management literature by demonstrating how established strategic management tools can be systematically integrated to support strategic decision-making for resource-based MSMEs operating in developing regions.

Based on these conditions, this study aims to analyze the internal factors (strengths and weaknesses) and external factors (opportunities and threats) affecting the moringa-based MSME industry in East Nusa Tenggara. Furthermore, the study aims to formulate appropriate business development strategies that can enhance the competitiveness and long-term sustainability of moringa-based MSMEs. The findings are expected to contribute not only to the strategic management literature but also to provide practical guidance for policymakers and MSME practitioners in strengthening the competitiveness and sustainable development of resource-based industries.

METHOD

This study employed a descriptive qualitative approach with the moringa-based micro, small, and medium enterprise (MSME) industry in East Nusa Tenggara (NTT), Indonesia, as the research object. A descriptive qualitative design was adopted because it enables a comprehensive exploration of strategic issues by capturing the perspectives of key stakeholders and the contextual conditions influencing the development of the moringa-based MSME industry. This approach was considered appropriate because the objective of the study was not to test hypotheses but to obtain an in-depth understanding of the internal and external factors influencing industry competitiveness and to support the formulation of appropriate business

development strategies.

The study relied primarily on primary data collected through interviews and questionnaires. Respondents were selected using purposive sampling because the research required individuals with direct knowledge and practical experience regarding the development of the moringa-based MSME industry. The respondents consisted of five MSME owners, ten employees, and two representatives from government institutions responsible for MSME development. This composition ensured that both internal business perspectives and external institutional viewpoints were adequately represented. The number of respondents was considered sufficient because the study emphasized the quality and relevance of information rather than statistical representation. In qualitative strategic management research, knowledgeable respondents are considered more valuable than large sample sizes, as they provide rich and context-specific insights into the strategic conditions of the industry.

The data were analyzed using the Porter's Diamond model to identify the internal and external factors affecting the moringa-based MSME industry. . Porter's Diamond Model was selected because it provides a comprehensive framework for examining how internal capabilities and external environmental conditions interact to influence industrial competitiveness. These factors were subsequently evaluated using the Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) matrices. The IFE matrix was employed to identify and assess the industry's key strengths and weaknesses, whereas the EFE matrix was used to evaluate external opportunities and threats by assigning weights and ratings to each strategic factor. The weighted score for each factor was obtained by multiplying its assigned weight by its corresponding rating, and the overall score for each matrix was calculated by summing the weighted scores of all factors (Wheelen , 2012).

The total scores derived from the IFE and EFE matrices were then incorporated into the Internal–External (IE) matrix to determine the strategic position of the moringa-based MSME industry. The IE matrix consists of two dimensions: the total weighted IFE score on the horizontal (X) axis and the total weighted EFE score on the vertical (Y) axis. Based on the intersection of these scores, the industry's strategic position can be identified, providing guidance for selecting appropriate strategic directions.

Finally, the SWOT matrix was employed to formulate alternative business development strategies by integrating the results of the internal and external analyses. Following the framework proposed by (David & David, 2017) four categories of strategies were developed: Strengths–Opportunities (SO), Strengths–Threats (ST), Weaknesses–Opportunities (WO), and Weaknesses–Threats (WT). These alternative strategies provide the basis for recommending the most appropriate business development approach for the moringa-based MSME industry in East Nusa Tenggara.

RESULTS AND DISCUSSION

Based on interviews conducted with 17 respondents, several internal and external factors were identified within the Porter's Diamond framework as influencing the business development of the moringa-based MSME industry. These factors serve as the basis for evaluating the industry's strategic environment and formulating appropriate business development strategies (Porter, 1990; Narulita et al., 2014)

Internal Factors

Internal factors encompass the conditions, resources, and capabilities of the moringa-based MSME industry in East Nusa Tenggara that influence its business performance and development. These factors directly determine the industry's capacity to produce high-quality products, enhance productivity, and achieve a sustainable competitive advantage. Within the Porter's Diamond framework, the internal environment is examined through three principal

dimensions: factor conditions, firm strategy, demand condition structure, and rivalry, and related and supporting industries. Together, these dimensions provide a comprehensive basis for assessing the internal strengths and weaknesses that shape the competitiveness of the moringa-based MSME industry.

Factor Conditions

Factor conditions refer to the availability and quality of resources that support industrial activities, including natural resources, human resources, financial capital, technology, and infrastructure. These resources constitute the foundation of the moringa-based MSME industry's capacity to operate efficiently and sustain its competitive position. According to the Central Bureau of Statistics of East Nusa Tenggara (BPS, NTT), the province's land-use structure is dominated by dryland agricultural areas, covering approximately 3,506,957 hectares. This characteristic provides favorable conditions for cultivating crops that are well adapted to limited water availability, particularly *Moringa oleifera*. Consequently, the abundance of dryland resources represents a strategic advantage for expanding the moringa-based MSME industry in East Nusa Tenggara. Human resources also play a fundamental role in supporting business performance and organizational development. Roosje Kalangi (2015), competent and productive human resources are essential for achieving organizational objectives. In East Nusa Tenggara, both rural and urban communities actively participate in moringa-related activities, ranging from cultivation and crop maintenance to product processing. This widespread community involvement indicates that the availability of labor for the moringa industry is relatively abundant. Human resource development is further supported through a combination of internal capacity-building initiatives undertaken by MSMEs and government-led training and mentoring programs. These programs are intended to enhance workers' technical knowledge, entrepreneurial skills, and overall competitiveness in response to evolving market demands.

Financial capital represents another critical factor influencing MSME development. Previous studies have emphasized that adequate access to capital is essential for business establishment, expansion, and long-term sustainability (Cumming et al., 2018; Dobbs & Hamilton, 2007). Adequate financial capital and effective capital management play a crucial role in ensuring business sustainability and improving organizational performance (Yuliana & Hadyarti, 2022; Wasfika et al., 2023). In the moringa-based MSME industry, capital adequacy can be assessed through several indicators, including access to financing, joint investment opportunities, effective capital utilization, interest rates, loan repayment periods, and the contribution of financial resources to business operations and expansion. Similarly, (Hilal et al., 2020) reported that limited access to financing tailored to the needs of MSMEs remains a major obstacle to business development. Although the availability of human resources and capacity-building programs has contributed to improving the knowledge and technical skills of local communities, financial constraints continue to restrict investment in technology, product innovation, and workforce development.

Technological support has also contributed to improving the performance of the moringa-based MSME industry. The provision of processing equipment, such as drying machines and leaf grinding machines, has enhanced production efficiency while improving product hygiene and quality. Nevertheless, several challenges remain. Participation in training programs is still limited, resulting in unequal distribution of knowledge and technical skills among MSME operators. In addition, budget constraints experienced by both MSMEs and supporting institutions have limited investment in production technologies, leading to unequal ownership of processing equipment across enterprises. Infrastructure remains another important factor affecting the competitiveness of moringa-based MSMEs in East Nusa Tenggara. Although infrastructure development has continued to improve, the province still faces considerable

challenges arising from its archipelagic geography, diverse soil characteristics, climatic conditions, varied topography, and uneven population distribution. These conditions increase transportation and logistics costs while reducing the efficiency of product distribution. Consistent with these findings, (Alam et al., 2025) reported that geographical constraints and inadequate infrastructure continue to pose significant logistical and distribution challenges for agricultural MSMEs, ultimately affecting their ability to compete in broader markets.

Demand Conditions

Demand conditions describe the level of market demand for moringa, both as a raw agricultural commodity and as a value-added processed product. In East Nusa Tenggara, demand for moringa-based products has shown a noticeable increase since 2018, driven by government initiatives to promote moringa as a high-value food commodity with strong economic potential and broad market prospects. These initiatives have contributed to raising public awareness of the nutritional and commercial value of moringa, thereby stimulating consumer demand. From a competitiveness perspective, products that offer superior quality and greater consumer value are more likely to attract sustained market demand and achieve a stronger competitive position. The growing interest in moringa-based products has encouraged the establishment and expansion of MSMEs that utilize moringa as their primary raw material to produce a diverse range of value-added food products. This increasing market demand not only creates new business opportunities but also strengthens the potential for the moringa-based MSME industry to expand and compete in both regional and wider markets.

Related and Supporting Industries

Related and supporting industries play a crucial role in enhancing the competitiveness of the moringa-based MSME industry by strengthening the value chain from raw material production to product commercialization. Supporting industries include the agriculture and plantation sectors, which function as upstream suppliers by providing high-quality moringa seedlings and ensuring the availability of raw materials for cultivation before they enter the processing and marketing stages. Financial institutions also contribute by providing access to business financing, enabling MSMEs to expand production capacity, invest in product innovation, and improve overall business performance. In addition, government agencies play a strategic role in strengthening human resource capacity through training and mentoring programs, facilitating product certification, such as food safety certification and halal certification, and promoting the adoption of appropriate technologies to improve product quality and production efficiency.

Moringa-based products have broad applications across several related industries, including the food, healthcare, and cosmetics sectors, all of which require raw materials that meet stringent quality standards. However, complying with these standards remains a significant challenge for local farmers. To satisfy industrial requirements, moringa cultivation areas are expected to be located away from residential settlements and livestock activities to minimize environmental contamination, maintain product hygiene, and ensure optimal plant growth. These quality requirements highlight the close interdependence between cultivation practices and the standards established by downstream industries.

External Factors

External factors refer to conditions that originate outside the moringa-based MSME industry but significantly influence its growth, competitiveness, and long-term development. Unlike internal factors, these external elements cannot be directly controlled by industry participants; however, they shape the business environment by creating both opportunities and challenges. Within the Porter's Diamond framework, the external environment is represented

by three principal dimensions: government, and chance.

Government

The current development of the moringa-based MSME industry in East Nusa Tenggara remains relatively limited, indicating that the region's potential for producing value-added moringa products has not yet been fully realized. Recognizing this potential, the provincial government has introduced various initiatives to promote the utilization of moringa, including its incorporation into the One Village One Product (OVOP) program. This initiative aims to encourage the transformation of the agricultural sector into a more productive, sustainable, and value-oriented sector while improving the welfare of local communities. Although moringa has been included in the OVOP program, it has not been designated as the primary flagship commodity in most participating villages. Instead, it is generally positioned as a complementary product that can support the development and diversification of MSME products. Nevertheless, the government's involvement through policy support and local economic development programs provides an important foundation for strengthening the competitiveness and future growth of the moringa-based MSME industry in East Nusa Tenggara.

Chance

Within the Porter's Diamond framework, chance refers to external circumstances that arise beyond the direct control of industry participants but can significantly influence the competitiveness and development of an industry. These conditions create opportunities that can be leveraged by MSMEs, including changes in consumer preferences, market expansion, and the growing potential of the moringa industry in East Nusa Tenggara.

For the moringa-based MSME industry, one of the most significant opportunities stems from the increasing public awareness of healthy lifestyles. Consumers are showing greater interest in herbal products, functional foods, and superfoods, leading to a growing demand for natural, plant-based products. In addition, local food exhibitions and promotional events provide valuable platforms for introducing moringa-based products to broader markets and increasing product visibility. Government support, together with collaboration among MSMEs, research institutions, financial institutions, and other relevant stakeholders, further creates opportunities for product diversification and innovation, enabling moringa-based products to generate greater added value and strengthen their competitive position in the market.

Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) Analysis

Following the identification of the internal and external factors affecting the moringa-based MSME industry in East Nusa Tenggara through the Porter's Diamond analysis, these factors were classified into strengths, weaknesses, opportunities, and threats (SWOT). The weighting and rating of each strategic factor were determined using the IFE and EFE matrices based on questionnaire responses from 17 respondents selected according to their knowledge, expertise, and experience related to the moringa-based MSME industry.

Table 1. Internal Factors Evaluation (IFE) Matrix

Category	Detail	Score
Key Strengths	Availability of raw materials (0.616), skilled workforce and knowledge (0.616), adequate technology (0.390)	2,93
Main Disadvantages	Suboptimal business strategy (0.140), limited business capital and restricted access to financing (0.230), inadequate organizational management (0.160)	2,93

Source: Research data (2026)

The IFE matrix results presented in Table 1 indicate a total weighted score of 2.93,

suggesting that the moringa-based MSME industry possesses a relatively strong internal position. The most influential strengths include the availability of raw materials (0.616), the presence of a skilled workforce with adequate knowledge (0.616), and the availability of appropriate processing technology (0.390). These factors provide a solid foundation for improving production performance and enhancing industrial competitiveness. Nevertheless, several internal weaknesses remain, particularly suboptimal business strategies (0.140), limited business capital and restricted access to financing (0.230), and weaknesses in organizational management (0.160). Addressing these constraints is essential to strengthen the industry's capacity for sustainable business development.

Table 2. External Factor Evaluation (EFE) Matrix

Category	Detail	Score
Key Opportunities	Healthy lifestyle trend (0.33), festivals and exhibitions supporting product promotion (0.29), increasing demand for herbal moringa products (0.28)	2,58
Major Threats	Increasing competition from similar products (0.15), higher quality requirements from consumers and business partners (0.16), inadequate infrastructure supporting distribution (0.14)	2,58

Source: Research data (2026)

The EFE matrix results summarized in Table 2 show a total weighted score of 2.58, indicating that the moringa-based MSME industry demonstrates a reasonably good ability to respond to external environmental conditions. The most significant opportunities arise from the growing healthy lifestyle trend (0.330), promotional support through festivals and exhibitions (0.290), and increasing consumer demand for herbal moringa products (0.280). These external conditions provide favorable prospects for market expansion and product development.

However, the industry also faces several important external threats, including increasing competition from producers offering similar products (0.150), stricter quality requirements imposed by consumers and business partners for moringa raw materials (0.160), and infrastructure limitations that continue to constrain distribution efficiency (0.140). These findings suggest that strengthening product differentiation and implementing standardized raw material quality management are essential strategies for enhancing competitiveness while mitigating external risks. Furthermore, the results are consistent with current consumer trends, in which growing awareness of healthy lifestyles has increased demand for herbal and nutrient-rich food products. Consequently, moringa-based MSMEs have an opportunity to capitalize on this trend by targeting health-conscious consumer segments through innovative, high-quality products. The IFE and EFE analyses suggest that improving the competitiveness of the moringa-based MSME industry cannot rely solely on strengthening the internal capabilities of individual enterprises. While the industry benefits from several important strengths, including abundant raw materials, a skilled workforce, and adequate processing technology, it continues to face challenges related to limited access to capital, suboptimal strategic management, and distribution constraints. These issues are largely structural and cannot be effectively addressed by MSMEs acting independently. Instead, they require stronger support through coordinated public policies and collaboration among relevant stakeholders. The findings therefore indicate that the long-term competitiveness of the moringa-based MSME industry will depend not only on the ability of individual enterprises to improve their business performance, but also on the development of a supportive business ecosystem that encourages innovation, expands market

opportunities, and promotes sustainable business growth.

Internal–External (IE) Matrix

The strategic position of the moringa-based MSME industry was determined using the Internal–External (IE) Matrix based on the total weighted scores of the IFE and EFE matrices. The industry obtained an IFE score of 2.93 and an EFE score of 2.58, placing it in Cell V of the IE Matrix. This position corresponds to the Hold and Maintain strategy, indicating that the industry possesses a relatively strong internal capability while demonstrating a moderate ability to respond to external environmental conditions. The position in Cell V suggests that the moringa-based MSME industry has a competitive standing with favorable market prospects. Accordingly, the industry should prioritize market penetration and product development strategies to strengthen its competitive position. By leveraging its internal strengths and capitalizing on external opportunities, moringa-based MSMEs can reinforce their market presence, maintain market share, and improve their ability to compete in an increasingly competitive business environment.

SWOT Matrix

Table 3. SWOT Matrix for the Development Strategy of the Moringa-Based MSME Industry in East Nusa Tenggara

Internal Factors External Factors	Strengths (S)	Weakness (W)
	S1. Availability of raw materials S2. Skilled workforce and technical knowledge S3. Adequate processing technology S4. Well-defined target marketing strategy S5. Diverse moringa-based product innovations	W1. Limited business capital and restricted access to financing for business expansion W2. Business strategies have not been implemented optimally W3. Ineffective organizational management
Opportunities (O)	Strategies S-O	Strategies W-O
O1. Growing healthy lifestyle trend O2. Increasing domestic demand for herbal moringa products O3. Research institutions supporting product development O4. Financial institutions supporting business development O5. Collaboration among government, the private sector, academia, and local communities O6. International support O7. Festivals and exhibitions supporting MSMEs O8. Government support through certification, training, and technology development	SO1. Develop innovative moringa-based products aligned with healthy lifestyle trends by leveraging the availability of raw materials, skilled human resources, adequate processing technology, and product innovation. SO2. Strengthen product branding by positioning moringa products as regional flagship products through targeted marketing and promotional activities.	WO1. Utilize financial support from research institutions and financial institutions to develop innovative health-based moringa products. WO2. Optimize product marketing through festivals and exhibitions to improve market reach and product visibility.
Threats (T)	Strategies S-T	Strategies W-T

T1. Changes in government policies and business regulations T2. Fluctuations in raw material prices due to policy limitations affecting production stability T3. Increasing quality requirements from consumers and business partners for moringa raw materials T4. Inadequate infrastructure affecting interregional distribution T5. Increasing competition from similar products	ST1. Strengthen product differentiation by utilizing the availability of raw materials, skilled human resources, and processing technology to improve competitiveness against similar products ST2. Improve product quality and implement standardized production practices to meet raw material quality requirements and strengthen market competitiveness	
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Source: Research data (2026)

Based on the SWOT analysis, six strategic alternatives were formulated by integrating the internal and external factors affecting the development of the moringa-based MSME industry in East Nusa Tenggara. These strategies include: (1) developing innovative moringa-based products aligned with healthy lifestyle trends, (2) strengthening product branding by positioning moringa products as regional flagship products, (3) utilizing financial support from research and financial institutions to facilitate the development of health-based products, (4) optimizing product marketing through participation in festivals and exhibitions, (5) strengthening product differentiation by leveraging the availability of raw materials, skilled human resources, and processing technology to address competition from similar products, and (6) improving product quality through the implementation of standardized production practices.

These strategic alternatives were designed by aligning the industry's internal strengths and weaknesses with external opportunities and threats. This integrated approach ensures that the proposed strategies effectively address the industry's strategic challenges while capitalizing on its competitive advantages, thereby supporting business growth, enhancing competitiveness, and promoting the long-term sustainability of the moringa-based MSME industry.

DISCUSSION

The findings of this study indicate that, based on Porter's Diamond analysis, the moringa-based MSME industry in East Nusa Tenggara possesses a relatively strong internal competitive environment. The availability of abundant raw materials, skilled human resources, and adequate processing technology provides an important foundation for producing competitive moringa-based products and supporting sustainable business development. According to Porter (1990), industrial competitiveness is determined by a business environment that promotes innovation, continuous improvement, and supportive institutional conditions. Consistent with this perspective, the interview findings and SWOT analysis suggest that the moringa-based MSME industry has favorable conditions to strengthen its competitive position.

The Internal Factor Evaluation (IFE) matrix produced a total weighted score of 2.93, indicating a strong internal position. The analysis shows that abundant raw materials, skilled labor, and adequate processing technology represent the industry's principal strengths. Nevertheless, weaknesses remain, particularly the suboptimal implementation of business strategies and limited managerial capacity, indicating that MSMEs should strengthen strategic planning, organizational management, and market expansion to improve business performance. The External Factor Evaluation (EFE) matrix yielded a total weighted score of 2.58, indicating that the industry is reasonably capable of responding to external environmental conditions. The growing public interest in healthy lifestyles has increased consumer demand for herbal and plant-based products, while festivals and exhibitions provide valuable opportunities to promote

moringa-based products to broader markets. These conditions create favorable opportunities for MSMEs to develop innovative value-added products that meet changing consumer preferences. However, the industry also faces increasing competition from similar products and stricter quality requirements imposed by consumers and business partners. These challenges emphasize the importance of strengthening product differentiation, implementing standardized production processes, and improving quality management systems to maintain product consistency, enhance competitiveness, and increase consumer confidence.

Based on the SWOT analysis, the moringa-based MSME industry is positioned in the Hold and Maintain quadrant of the Internal–External (IE) Matrix. This strategic position indicates that business growth should be pursued through market penetration and product development strategies. Market penetration should focus on strengthening regional branding, expanding promotion through festivals and exhibitions, and improving product differentiation by leveraging the availability of raw materials, skilled labor, and processing technology. Meanwhile, product development should emphasize innovation in moringa-based products that respond to the growing healthy lifestyle trend while improving product quality through standardized production practices. Collectively, these strategies are expected to strengthen the competitiveness and long-term sustainability of the moringa-based MSME industry.

Compared with previous studies, which generally focused on common MSME constraints such as financing, technology adoption, and marketing, this study provides a broader perspective by integrating Porter's Diamond Model with the IFE, EFE, IE Matrix, and SWOT framework. This integrated analytical approach demonstrates that the competitiveness of the moringa-based MSME industry is determined not only by the availability of local resources but also by the interaction between internal capabilities and external institutional conditions. These findings extend the strategic management literature by showing that sustainable competitiveness cannot be achieved solely through strong internal resources; instead, it requires coordinated institutional support and an integrated strategic management approach that links competitiveness assessment, strategic positioning, and strategy formulation within a single analytical framework.

From a practical perspective, the findings provide valuable implications for policymakers and supporting institutions. Local government programs should not only improve production capacity but also facilitate access to financing, product certification, regional branding, and wider market promotion through exhibitions, festivals, and business networking activities. As market penetration and product development emerged as the most appropriate strategic directions, policy interventions should prioritize strengthening product branding, expanding market access, and encouraging innovation in moringa-based products. Universities and research institutions can further support the industry through technology transfer, product innovation, quality standardization, and business mentoring, while financial institutions should provide financing schemes that better accommodate the investment needs of food-processing MSMEs. Strengthening collaboration among government agencies, academia, financial institutions, the private sector, and MSME actors will help establish a more supportive business ecosystem, thereby enhancing the long-term competitiveness and sustainable development of the moringa-based MSME industry in East Nusa Tenggara.

CONCLUSION

This study analyzed the internal and external factors influencing the business development of the moringa-based MSME industry in East Nusa Tenggara (NTT), formulated appropriate strategic alternatives, and identified suitable strategic directions to strengthen industry competitiveness. The findings indicate that the industry's principal internal strengths include the availability of abundant raw materials, a skilled and knowledgeable workforce, adequate processing technology, and diverse moringa-based product innovations. However,

limited business capital and the suboptimal implementation of business strategies remain important internal constraints. Externally, the industry benefits from growing consumer demand driven by healthy lifestyle trends, increasing interest in herbal products, and support from government agencies, research institutions, financial institutions, and other stakeholders. Nevertheless, changes in government regulations, increasing quality requirements, inadequate distribution infrastructure, fluctuations in raw material prices, and intense market competition continue to pose significant challenges to sustainable business development.

The integration of Porter's Diamond Model with the IFE, EFE, IE Matrix, and SWOT framework indicates that the moringa-based MSME industry is positioned in the Hold and Maintain quadrant, suggesting that market penetration and product development represent the most appropriate strategic directions. Accordingly, strengthening regional product branding, expanding promotion through festivals and exhibitions, developing innovative health-oriented moringa products, improving product quality through standardized production practices, and utilizing institutional financial support are recommended as the primary strategies for enhancing competitiveness and long-term sustainability.

This study contributes to the strategic management literature by demonstrating that integrating Porter's Diamond Model with the IFE, EFE, IE Matrix, and SWOT framework provides a systematic approach for linking competitiveness assessment, strategic positioning, and strategy formulation in resource-based MSMEs. From a practical perspective, the findings offer guidance for policymakers, supporting institutions, and MSME practitioners in designing coordinated programs that strengthen product innovation, market access, institutional collaboration, and business competitiveness. Future research is encouraged to involve a broader range of stakeholders and incorporate strategy prioritization techniques, such as the Analytic Hierarchy Process (AHP) or the Quantitative Strategic Planning Matrix (QSPM), to further validate and prioritize the proposed strategic alternatives.

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