Proceeding Paper

Design of a Strategy for the Sustainable Development of the Bakery Industry in Medan City †

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Abstract: Medan City has excellent potential to develop small and medium industries. One of the industries that has potential is the bakery industry. Based on the data obtained, it is known that the small-scale bakery industry dominates by 86%. To create a competitive bakery industry, the products must be varied, innovative, good quality, follow market needs, and follow the eco-friendly production process. Based on this, the right strategy is needed so that the bakery industry can develop and increase its competitiveness towards sustainability. This research aims to create a strategy design that the bakery industry can implement to improve competitiveness and productivity toward sustainability. Based on the IFE and EFE matrix results, the bakery industry in Medan City is in quadrant IV, namely in the growth and built position. The right strategy, namely a market penetration strategy, and also a strategy for product development, is required. Based on the results of the QSPM matrix, the strategy with the highest score was obtained, namely, improvement in production processes in the bakery industry through the efficient and eco-friendly production process.

Keywords: bakery industry; business strategy; sustainability; circular economy; SWOT

1. Introduction

Small and medium industries play significant roles in Indonesia's economic recovery, such as increasing foreign exchange, creating jobs, and encouraging more equitable economic conditions. Small and medium industries are driving the economy in Indonesia. Medan City is one of the cities in North Sumatera, and it has excellent potential for developing small and medium industries. One of the promising industries in Medan City is an industry engaged in bread processing, because bread is one of the staple foods for some people. Based on data from the Medan City Industry Office, the small-scale bakery industry accounts for 86% of the industry, the medium-scale bakery industry for 13%, and the large-scale bakery industry for 1%.

Based on these data, the small-scale bakery industry dominates by 86%, so appropriate strategies are needed so that the bakery industry can increase its competitiveness. This study is also related to the increasingly fierce competition between sectors, so small-scale bakery industries can plan their production operations appropriately, because it will impact the surrounding environment [1]. In addition, competition among small-scale bakery

industries is also moving to a new level due to the mix of technological developments and customer satisfaction levels. Generally, the small- and medium-scale bakery industry is directly rooted in the community, so it must always consider various social and cultural aspects. The correlation between customer behavior and marketing strategy is good [2]. The best bread is the bread that goes through a structured production process and meets standards so that the quality of the bread can always be maintained.

In addition, every bakery must gain competitive advantages such as offering product differentiation, sustaining value creation, and the flexibility to make changes [3]. It also relates to applying the circular economy to the bakery industry. The circular economy aims to minimize waste, optimize resource use, and create added value throughout the life cycle of bakery products. It can be achieved through various strategies that involve the entire value chain, from raw materials to waste management.

The circular economy offers a model for economic growth and development that enables significant advancements in resource usage efficiency while accounting for social justice, economic welfare, and environmental quality [4]. It also relates to franchised bakeries significantly impacting the closure of other bakeries within a 200 m radius. However, when focusing only on the closure rates of small- and medium-sized bakeries, there is no empirical evidence that franchised bakeries affect the closure of nearby small- and medium-sized non-franchised bakeries [5].

Based on the results of observations, it was found that the average small-scale bakery industry in Medan City still uses production planning that is simple and based on past production experience. This impacts the industry due to the lack of knowledge as to whether the planning carried out so far has been running optimally. The bakery industry must also face new challenges involving cost, time, and quality of products [6]. One of the main advantages of becoming a business owner is having autonomy [7]. Therefore, designing and creating an appropriate strategy that considers external and internal strengths is necessary to obtain an agile approach to keep abreast of the times and be sustainable.

2. Method

This research was conducted by observing several bakery businesses in Medan, followed by interviews with related parties, and distributing questionnaires containing questions about the problems studied. The respondents in this study were business actors in the bakery industry in Medan City. In data processing and analysis, the External Factor Evaluation matrix (EFE Matrix), Internal Factor Evaluation matrix (IFE Matrix), SWOT (Strength, Weakness, Opportunity, and Threat) matrix, and QSPM (Quantitative Strategic Planning Matrix) are used. These analysis tools analyze the internal and external environment to obtain the strengths, weaknesses, opportunities, and threats faced by the bakery industry in Medan City.

The first step to determining the internal and external factors involves identifying factors relevant to the bakery industry in Medan based on initial observations and interviews with local bakery business owners. Additionally, customer satisfaction surveys, competitor analysis, and market research are conducted to establish the internal and external factors used in the SWOT analysis.

SWOT analysis systematically evaluates a company's internal resources and external environment by examining its strengths, weaknesses, opportunities, and threats [8]. The steps of a SWOT analysis are designed to maximize opportunities and strengths while minimizing threats and weaknesses. This rationale guides the execution of these steps. The most fundamental analysis technique, which helps identify subjects and issues from four different SWOT sides, is the SWOT approach's foundation. This analysis provides guidance

or recommendations for minimizing vulnerabilities, avoiding threats, and maintaining or expanding existing strengths and possibilities [9].

There are three stages in the design of the bakery industry development strategy in Medan City: the entry stage, the matching stage, and the decision stage. The entry stage contains the initial information needed for strategy design. In this entry stage, the analytical tools used are the EFE matrix and the IFE matrix. The matching stage contains external and internal factors, making it a reference in strategy design. In this matching stage, the analytical tools used are the IE (Internal External) matrix and SWOT. The SWOT analysis method is the right tool for identifying problems in the bakery industry. With a SWOT analysis, one can obtain the right strategy to implement. Based on the design results, the decision stage contains the best strategy that the bakery industry can implement in Medan City. In this decision stage, the analysis tool used is QSPM. QSPM is an analysis tool used to obtain the best strategy based on previously identified internal and external factors. QSPM was used to rank the selected strategies [10].

3. Results

3.1. The Results of the SWOT Analysis

The external environmental analysis carried out in the bakery industry in Medan City consists of an analysis of opportunities and threats. The external environmental analysis was carried out to identify opportunities and threats that could affect the performance of the bakery industry in Medan City in carrying out its activities. In addition, this analysis was carried out so that the bakery industry in Medan City can improve its competitiveness. The aspects to be analyzed in the external environment are economic, socio-cultural, technological, government and legal, political, demographic and environmental, sustainability, and competitiveness. These aspects were identified through observation, interviews with owners, and questionnaires distributed to several Medan City bakeries. In addition, identification was also carried out based on secondary data that had been observed so far.

Internal environmental analysis carried out in the bakery industry in Medan City consists of analyzing strengths and weaknesses. This analysis is directly related to the internal bakery industry. Based on the results of observations and interviews, bakery entrepreneurs in Medan always try to understand their organizational environment. An analysis of the external conditions of the bakery industry in Medan City generated seven opportunities and five threats.

Table 1 shows that the most critical opportunity factor for the bakery industry in Medan City is support from the local government towards a sustainable industry, with a score of 0.252. This is because the Medan City Government is very active in empowering business actors by providing training programs tailored to their needs and providing easy access to capital for small and medium industries. In addition to that, the local government supports a sustainable bakery industry. The threat factor that significantly influences the bakery industry in Medan City is the level of similar business competition, with a score of 0.307. Every bread business actor in Medan City must constantly innovate to stand out compared to the others. To improve their sustainability, small and medium industries must allocate their resources and efforts toward bolstering their risk management programs, incorporating them into their daily operations and policy-making procedures [11].

The existence of a sizable opportunity to run a bakery business is one of the reasons why more and more people are interested in being involved in this industry. The increasing number of bakery business actors in Medan City will increase competition. Every business must identify the strategy behind managing business talent to create business success [12]. The total opportunity weight score is 1.425, while the total threat weight score is 1.394. This shows that the total opportunity weight score exceeds the threat weight score. It indicates

that the bakery industry in Medan City can take advantage of the current opportunities and minimize the adverse effects of the threats it faces. The total EFE weight score for the bakery industry in Medan City is 2.819, indicating that the bakery industry's external condition in Medan City is in a moderate position. Based on an analysis of the internal conditions of the bakery industry in Medan City, seven strengths and five weaknesses were found.

Table 1. External Factor Evaluation (EFE) matrix analysis.

External Factors Opportunity	Weight	Rating	Weight Score
Technology advances	0.069	2.30	0.158
Ease of obtaining eco-friendly raw materials	0.072	2.40	0.172
Customer loyalty	0.081	2.70	0.218
Support from local government towards a sustainable industry	0.087	2.90	0.252
Population growth	0.075	2.50	0.187
High market potential	0.084	2.80	0.235
The role of social media	0.078	2.60	0.202
Total	0.545		1.425
Threat			
Raw material price fluctuations	0.090	3.00	0.269
A similar level of business competition	0.096	3.20	0.307
Substitute product	0.087	2.90	0.252
Consumer purchasing power decreased	0.093	3.10	0.288
Changes in consumer tastes	0.090	3.10	0.278
Total	0.455		1.394
Grand Total	1.000		2.819

Table 2 shows that the most crucial strength factor for the bakery industry in Medan City is market segmentation, with a score of 0.376. This is because the bakery industry also has a precise market segmentation. The bakery industry can reach people from all walks of life, including children and adults. This is because bread is one of the staple foods for some people in Medan City. The weakness factor that significantly influences the bakery industry in Medan City is that the technology used is still simple, with a score of 0.301. The technology that actors use in the small-scale bakery industry is generally relatively simple. This is due to the limited capital and also the skills of the workers. The production process of bread processing is also still straightforward, so this can be improved. The weight score for strength is 1.966, while the total for weakness is 1.271. One of the areas for improvement in the bakery found in this research is that it needs to conduct digital marketing. The process of digital transformation has impacted every aspect of our society. It is a tool for raising staff professional competency levels, cutting operating expenses, sharpening business process optimization, expanding comprehension of the client experience, and elevating corporate culture standards.

Furthermore, digitalization creates an entirely new management paradigm. Digital technologies are now the primary factors determining a company's competitiveness and contributing to its increased worth [13]. To attain survival conditions, business actors must be able to create, organize, and carry out plans for achieving actual, quantifiable operational activities [14].

Table 2. Internal Factor Evaluation (IFE) matrix analysis.

Internal Factors	Weight	Rating	Weight Score
Strength			
Has a halal certificate from MUI	0.076	2.90	0.219
Varied and innovative products with environmentally friendly production processes	0.065	2.50	0.163
Availability of capital from KUR	0.096	3.70	0.357
Using quality raw materials that are environmentally friendly	0.086	3.30	0.284
Has environmentally friendly packaging and labeling	0.083	3.20	0.267
An affordable price	0.089	3.40	0.301
Have market segmentation	0.099	3.80	0.376
Total	0.594		1.966
Weakness			
Standard Operating Procedure (SOP)	0.078	3.00	0.234
The technology used is still simple	0.089	3.40	0.301
Have not conducted digital marketing yet	0.083	3.20	0.267
Have not included the expiration date on the product	0.076	2.90	0.219
Management that has not been maximized	0.081	3.10	0.250
Total	0.406		1.271
Grand Total	1.000		3.237

It shows that the total weighted score of the strengths is more significant than the weaknesses. It indicates that the actors in the bakery industry in Medan City take advantage of internal strengths and can overcome existing weaknesses. The IFE total weight score for the bakery industry in Medan City is 3.237, which indicates that the industry's internal condition is in a strong position. The IE matrix analysis of the bakery industry in Medan City can be seen in Figure 1 (The red arrow indicates the intersection point of the IFE and EFE scores).
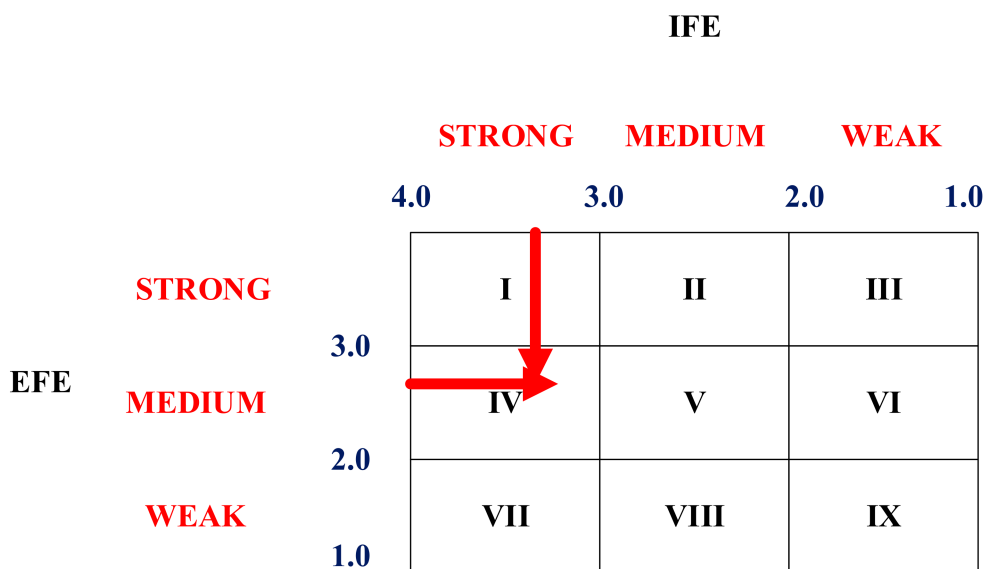

Figure 1. Analysis of the IE matrix in the bakery industry in Medan City.

Based on the EFE and IFE matrix analysis results in the bakery industry in Medan City, the EFE matrix total weight score of 2.819 is in a moderate position, and the IFE matrix total weight score of 3.237 is in a strong position. Based on the position mapping results, it was found that the bakery industry in Medan City is in the growth and build position (quadrant IV). The strategic design for this position is an intensive strategy, namely a market penetration strategy and a strategy for product development. The market penetration strategy is carried out to increase and expand market share by conducting more active offline and online marketing and emphasizing environmentally friendly production processes and sustainability. In contrast, the product development strategy is to produce more innovative bakery products with efficient and environmentally friendly production processes according to consumer tastes and the times. Market penetration and product development are suitable strategies to apply to increase the sustainable growth of the bakery industry in Medan City.

3.2. Design of a Strategy for the Sustainable Development Bakery Industry

In the decision analysis with QSPM, priority strategies will be selected to implement in Medan City's sustainable bakery industry. The input data used at this stage are the IFE matrix analysis, EFE matrix analysis, and SWOT matrix analysis, to obtain the most appropriate implementation strategy. In making the QSPM matrix, you must set an Attractiveness Score (AS) value that ranges from 1 to 4. Calculations from QSPM will bring up a TAS (Total Attractiveness Score) value, which will be an indicator in determining priority strategies to increase competitiveness in the bakery industry in Medan City. The results of the calculation of the QSPM matrix can be seen in Table 3.

Table 3. Design of strategy for the sustainable development bakery industry in Medan City.

Rating	Design of Strategy	TAS Score
1	Improving the production process into an environmentally friendly production process by increasing the innovation of bakery products produced, so that products can be varied, of a high quality, sustainable, and follow market needs	25.657
2	Participate in programs carried out by the local government to empower sustainable small and medium industries	25.441
3	Actively carry out digital marketing using business social media so that customers know the variations of the latest bakery products and environmentally friendly production processes	24.799
4	Improving the quality of service to consumers in maintaining customer loyalty	24.741
5	Manage halal certificates by the MUI so that customers feel safe and have confidence in consuming the bakery products being sold	24.540

4. Discussion

Based on the analysis results, the strategy that obtains the highest TAS score involves changing the production process into an environmentally friendly production process by increasing the innovation of bakery products produced so that products can be varied, of a high quality, sustainable, and follow market needs. This strategy obtains a TAS score of 25.657. In a close competition, innovating the products produced to suit consumer tastes and market needs is one of the right ways to increase competitiveness among

similar competitors. One of the keys to competing with competitors is the emphasis on environmentally friendly production processes. There is more to innovation than just launching new goods and services. It encompasses all business operations and is directly correlated with business strategy. The significance of intangibles is emphasized in the suggested innovation paradigm. It also discusses the conflicts that arise when businesses and society try to incorporate sustainability [15]. Because of that, innovation has a significant role in the growth, survival, and success of the bakery industry [16].

The following strategy is to participate in programs carried out by the local government to empower sustainable small and medium industries. This strategy obtains a TAS score of 25.441. The following recommended approach is to actively carry out digital marketing using business social media, so that customers know the variations of the latest bakery products and environmentally friendly production processes. Content contribution is a more advanced kind of consumer engagement than content consumption. It involves consumers paying attention to advertising content and sharing this information with others in their social networks. The distribution of information plays a crucial role in determining the effectiveness of influencer marketing campaigns [17].

In addition to that, social media is used as a promotion instrument because more visibility makes the business more potent in the market and promotes the company [18]. Marketing operations prioritizing customer insights are widely recognized as advantageous, making it a worthwhile investment for organizations across all industry sectors [19]. The following recommended strategy is to manage halal certificates by the MUI so that customers feel safe and confident when consuming the bakery products being sold. Policymakers are vital in advancing responsible business practices within the halal bakery industry [20]. The primary findings emphasize the significance of innovation in the competitive bakery industry, with internal marketing playing a vital role in fostering innovation and ensuring long-term viability [21]. The Medan City Government is very enthusiastic about empowering sustainable small and medium industries. Training programs provided to actors in the small and medium industries can improve the capabilities and competencies of human resources engaged in the bakery industry.

To develop and sustain the bakery industry in Medan, various forms of partnerships with local organizations, agricultural producers, and educational institutions can provide significant benefits. For instance, partnerships with local agricultural producers can support more sustainable access to raw materials and promote environmentally friendly practices. It is also evident in eco-friendly farm initiatives involving local communities to enhance community welfare and ecosystem health. Such a model demonstrates that local collaboration can improve food security and resource access and support sustainable farming practices with positive impacts on the surrounding communities and the environment.

Furthermore, collaboration with educational institutions, such as universities or training centers, can provide advanced research and innovation in the bakery sector. These institutions can partner in research and product development and provide skill training for workers to improve production efficiency and product quality. Educational partnerships also enable the industry to stay aligned with market trends and evolving consumer needs, allowing for a more varied product range that meets consumer preferences.

Through these partnerships, the bakery industry in Medan can strengthen its market position, meet sustainability standards, and adapt to consumer preferences that increasingly prioritize eco-friendly and innovative products.

Several studies have explored sustainable innovation within the bakery industry. These have identified key areas such as product innovations with enriched ingredients (e.g., dietary fiber), advancements in production processes to reduce waste, and strategies to meet consumers' evolving demand for sustainable, health-conscious foods. Additionally,

research into the motivations and types of innovations in bakery businesses has found that new products with enhanced health benefits and environmentally friendly production practices are increasingly prioritized to boost market competitiveness and customer satisfaction [22].

5. Conclusions

The conclusion of this study is based on the results of the IFE and EFE matrix, and it is found that the bakery industry in Medan City is in quadrant IV, namely in the growth and build position. The right strategy for this position is intensive, namely a market penetration strategy and a product development strategy. Based on the results of the QSPM matrix, it was found that the strategy with the highest score was improving the production process into an environmentally friendly production process by increasing the innovation of bakery products produced so that products can be varied, quality, sustainable, and follow market needs with a score of 25.657. The study area can be expanded for future research. Subsequent research can be conducted in Medan City and the entire Province of North Sumatera.

Conflicts of Interest: The authors declare no conflicts of interest.

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