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Development of the Mainstay Food Industry Based on a Creative Economy

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Abstract

Background: The food industry is a small and medium-sized enterprise (SME) that contributes 39.41% to the total business units and has the highest production value (75.22%) in Jambi Province. Furthermore, Batang Hari Regency has 838 food industry business units and is the 8th ranked in food industry ownership in Jambi Province, but the 1st in production value contribution. Therefore, it is necessary to design a strategy to establish a sustainable, creative, food industry-based economy to develop the industry.

Objective: This research aims to determine the mainstay of the creative economy-based food industry in Batang Hari Regency, Indonesia. It also formulates strategies for developing a sustainable, creative, economy-based mainstay food industry.

Methodology: This research used quantitative, descriptive, and observational methods. The Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) analysis model was

used to determine the leading food industry. Meanwhile, the SWOT-TOPSIS was used to formulate industrial development strategies.

Result: The results showed that the food industry in the Batang Hari district consisted of 5 business groups: tubers, fruits, plantation products, river/fish products, and processed nuts. Of the five business groups using the TOPSIS (model, the food industry from the processed nuts group was selected as the mainstay food industry. The development strategy of the processed nuts business group as a mainstay food industry in Batang Hari district is carried out through multi-flavoured products, increasing labour competence, creating contemporary processed products, providing low-cost credit facility assistance, and expanding the market through multimedia.

Conclusion: The processed nuts business group is the mainstay of the food industry. Development strategies can be carried out through multi-flavoured products and various product development, increasing labour competence, creating contemporary processed products, and providing credit facility assistance with low capital cost programs.

Unique contribution: This research develops a SWOT (strengths, weaknesses, opportunities, and threats) model combined with criteria in the TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) model to formulate a food industry development strategy based on the creative economy.

Key Recommendation: Labour competence, business management skills, production design, and capital support for technology financing and market research on consumer tastes must be improved.

Keywords: Agricultural Commodities, Economic Development, Creative Economy, Industrial Policy

Introduction

The development of the food industry is critical to the region's economic growth. The food sector can have a financial influence by adding value to primary products and providing employment opportunities for the region's workers. Aside from that, the food industry has a twofold impact on the economy. The food sector may also establish new markets and influence consumer behaviour. It is consistent with Pinem (2016) that industry is a leading sector with the capacity to drive growth in a region. This expansion was driven by production and sales activity, employment, and other factors. Meanwhile, Desfiando (2014) stated that the food industry has various advantages in the form of huge capitalisation value of invested capital, the ability to absorb workforce and the creation of added value from every input or basic material processed.

Industrial development, which influences the workforce's employment capacity, also addresses unemployment and poverty. However, industrial development has not moved quickly. It shows that the industrial sector contributes little at the provincial and district levels. According to data, the industrial sector's contribution to Jambi Province was 10.18% in 2022, but Batang Hari district's contribution was only 10.88%.

The food industry's survival is essential during this period of economic crisis. It can help reduce recession-related inflation and contribute to people's food security and job creation (Sharma et al., 2019). Thus, attempts to grow the food industry are vital.

The food business is within the small and medium industries (IKM) sector. The food industry accounts for 39.41% of the total IKM business units in Jambi Province (30,456). It suggests that

over 40% of SMEs in Jambi Province are involved in food processing or use raw materials from food plants.

From the distribution of business units, the highest number of SMEs is in the Kerinci district, with 2,457 business units. Furthermore, Jambi City is the second highest, with 2,093 business units. However, the highest production value produced by SMEs, or the food industry is in Batang Hari Regency, with a total production value of Rp. 8,351,641,589. This figure contributes 75.22% of the total production value of the food industry in Jambi Province.

Batang Hari Regency only has 838 business units and ranks 8th in food industry ownership in Jambi Province. However, the ownership of the food industry production value produced by Batang Hari district is currently the highest in Jambi Province. The contribution of the food industry's production value of 75.22% is very significant for the food industry in Batang Hari district.

Technically, the development of the food industry is grouped into five categories, including processed tubers, processed fruit, processed plantation products, processed fishery products, and processed nuts. The five processed food industries are in Batang Hari Regency. For this reason, it is also necessary to determine which food industry will be the mainstay for future development.

The primary raw material for the processed food industry comes from food crops. Therefore, the development of the mainstay food industry in Batang Hari Regency needs to pay attention to the availability of raw materials so that the food industry business can be sustainable.

In line with efforts to develop a mainstay food industry and ensure business sustainability, research objectives can be formulated in the form of determining the leading food industry and formulating development strategies that must be carried out by stakeholders, both the government and the food industry community, so that the food industry is growing rapidly in Batang Hari district.

Literature Review

In times of economic recession, the food industry can help people meet their needs, which are marketed online and offline. Technically, the food industry also positively impacts the economic recession, especially the decline in demand for products produced by the manufacturing industry. The food industry, based on the creative economy, plays the most significant role in developing the regional economy. This industry uses raw materials from agricultural products. The food industry is most present in the domestic market, especially in the food and beverage industry, which people always need.

In addition, it is necessary to sort and determine which industries are the mainstay so that the industry can develop according to market demands and tastes. The selection and determination of mainstay foods must be carried out using a method based on the advantages of each industry categorised as a mainstay food industry. The Technique for Others Reference by Similarity to Ideal Solution (TOPSIS) method can be used to determine the mainstay food industry in question and which food industry to rely on, and criteria-based superiority (Esfandiari & Rizvandi, 2014). These criteria are the number of business units, the number of workers, production value, and investment value (Fiati et al., 2019).

From the calculation results for determining the mainstay food industry using the TOPSIS method, selected mainstay food industries will be obtained for development. The selected mainstay food

industry was developed using appropriate strategies and targets. To formulate a strategy for growing and developing selected superior mainstay foods, a Qualitative SWOT was carried out since it produced the best.

Various methods \can be used to determine superior/mainstay decision choices. One of these determination methods is the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS). According to Fiati et al. (2019), the TOPSIS method was used to determine superior craft products and local wisdom. To determine this advantage, five selected criteria are used, namely the number of business units, the number of workers, production value, investment value, and comparative value.

Irmawati (2015) identified the leading industries in Central Java Province. The method used to determine the leading industry is LQ analysis (SLQ and DLQ) followed by Shift Share analysis. The results of his research show that the leading industries in Central Java Province include the beverage industry, tobacco processing industry, textile industry, apparel industry, wood industry, printing industry, furniture industry, and other processing industries.

Another research conducted by Lareza et al. (2021) used the Analytical Network Process (ANP) to determine the weight of marketing resources and the Technique for Order'Others Preference by Similarity to Ideal Solution (TOPSIS) method to determine marketing strategy priorities for the banana chips. The results of the calculations recommended that marketing strategies prioritise improving service quality, followed by providing promotions to consumers during certain events. Similar research has also been carried out by Wu et al. (2010), who used the ANP and TOPSIS methods to produce a framework for deciding marketing strategies for private hotels. In addition, Abiddin et al. (2017) conducted marketing strategies with SWOT and TOPSIS. Additionally, Akbar et al. (2020) also combined the SWOT and TOPSIS methods in formulating competitive strategies at DL Coffee Shop.

Research Methods

This research used quantitative, descriptive, and observational methods to determine the food industry's mainstay and development strategy. Secondary and primary data are needed to support this quantitative descriptive method. Complementing the quantitative descriptive research method, observational methods were also used. The observational method was used to observe the growth and development of the food industry, which will be relied upon to accelerate its development in the Batang Hari district. Using this method, in-depth research was also carried out through exclusive interviews with mainstay food industry managers.

This research used two analysis models to answer the research objectives regarding the mainstay food industry based on a sustainable creative economy in Batang Hari Regency. The first analysis model was the Technique for Order Reference by Similarity to Ideal Solution (TOPSIS) analysis model. It used an approach that means the selected option has the closest measure to the positive correct method and the farthest measure from the negative correct method. After selecting the mainstay food industry based on a sustainable creative economy, the SWOT Plus TOPSIS analysis model was used to answer the second research objective.

Research Results

A Technique for Others Reference by Similarity to Ideal Solution (TOPSIS) was used to determine which creative economy-based food industry is the mainstay. The process was carried out to determine which food industry was selected as a mainstay based on the creative economy.

The food industry that became the target of calculations in determining the mainstay food industry was 110 business units, which were divided into business groups: 27 units of tubers, 21 units of fruit, 22 units of plantation products, 21 units of river/fish products, and 19 units of processed nuts.

A calculation process was needed to select the mainstay food industry from the 110 business units. This process took eight stages as follows:

1. Determining the weight of the mainstay food industry criteria

Five criteria—business units, labor, production value, investment value, and turnover—can be used to determine the weight of the food industry. The weights for these criteria are determined as shown in Table 1.

Table 1. Determining the weight of the mainstay food industry criteria

Criteria	code	Weight	Cost/Benefit
Business unit	C.1	0,200	Benefit
Labor	C.2	0,133	Cost
Production value	C.3	0,333	Benefit
Investment value	C.4	0,067	Cost
Omset	C.5	0,267	Benefit

Source Data processed, 2023

2. Determining the value of the mainstay food industry

At this stage, the value of each criterion that has been determined for each food industry business group, which consists of five business groups, is determined. This value is in the form of the number of business units (C.1), the number of workers (C.2), the total production value (C.3), the total investment value (C.4), and the total turnover (C.5). These five values are in Table 2 below.

Table 2. Mainstay Food Industry Value

Carona	Code				
Group	C.1	C.2	C.3	C.4	C.5
Tubers	27	46	4.056.000	114.100.000	36.200.000
Fruits	21	31	3.168.00	57.500.000	19.000.000
Plantation Results	22	49	3.600.000	219.000.000	50.300.000
Results from	21	39	3.348.000	74.000.000	30.500.000
rivers/fish					
Processed Nuts	19	43	1.698.000	158.550.000	103.700.000
	Benef	Cos	Benefit	Cost	benefit
	it	t			

Source Data processed, 2023

3. Determination of the normalized matric

From the data in Table 2 above, the processing is carried out into a normalized matrix as in Table 3 below.

Table 3 Normalized Matrix

Dividers	14,8324	20,396 0781	5683,826 408	35302,9 7438	21895,2 04
Charles		(Codes		
Groups	C.1	C.2	C.3	C.4	C.5
Tubers	0,364	0,300	239,739	216,545	441,439
Fruits	0,283	0,202	187,252	109,127	231,695
Plantation Results	0,297	0,320	212,786	415,631	613,381
Results from rivers/fish	0,283	0,254	197,891	140,441	371,931
Processed Nuts	0,256	0,280	100,364	300,905	1264,565

Source Data processed, 2023

4. Normalised determination of the food industry

After determining the normalised matrix, the normalised matrix for the mainstay food industry is continued, as seen in Table 4.

Table 4 Mainstay food industry normalised matrix

Стольс	Code					
Groups	C.1	C.2	C.3	C.4	C.5	
Tubers	0,364	0,300	239,739	216,545	441,439	
Fruits	0,283	0,202	187,252	109,127	231,695	
Plantation Results	0,297	0,320	212,786	415,631	613,381	
Results from rivers/fish	0,283	0,254	197,891	140,441	371,931	
Processed Nuts	0,256	0,280	100,364	300,905	1264,565	

Source :Data processed, 2023

5. Determination of positive and negative ideal solutions

After the normalized matrix for the mainstay food industry has been carried out, the positive and negative ideal solutions are calculated as described in Table 5.

Table 5. Determination of positive and negative ideal solutions

Groups	C.1	C.2	C.3	C.4	C.5
PIS(A+)	0,364068	0,20214671	239,7390	109,1267	1264,5645
NIS(A-)	0,256196	0,31952221	100,3641	415,6307	231,6945

Source: Data processed, 2023

6. Determination of the distance to the ideal solution value

After obtaining the positive and negative ideal values, the distance to the ideal solution value is also calculated, as shown in Table 6

Table 6. Determining the distance to the ideal solution value

Groups	D+	D-
Tubers	830,105	321,018805
Fruits	1034,203	318,581438
Plantation results	720,2162	397,898412
Results from rivers/fish	894,1627	323,893254
Processed	237,0746	1039,22199

Source: Data processed, 2023

7. Determining preference values

Preference values need to be calculated to be used as a reference in decision-making regarding the food industry selected for analysis. The preference values are in Table 7 below.

Table 7 Determining Preference Values

Groups	V
Tubers	0,278874
Fruits	0,235501
Plantation Results	0,355866
Results from rivers/fish	0,26591
Processed Nuts	0,814248

Source: Data processed, 2023

8. Determining selected food industry decisions

Based on the preference values presented in the table above, a ranking of the preference values is carried out to obtain a ranking of the food industries selected to be the mainstay food industry in order of ranking.

Table 8 Determining Selected Food Industry Decisions

Groups	Rank
Tubers	3
Fruits	5
Plantation Results	2
Results from rivers/fish	4
Processed Nuts	1

Source: Data processed, 2023

B. Strategy for Developing a Mainstay Food Industry Based on a Sustainable Creative Economy in Batang Hari Regency

The TOPSIS-based SWOT Plus analysis model is used to formulate a strategy for developing a mainstay food industry based on a sustainable creative economy. This SWOT analysis was created based on the criteria used in the TOPSIS model, which is equipped with incept (in-depth) analysis in strategy formulation.

Two stages of work were carried out to formulate strategies using the TOPSIS-SWOT model as follows:

1. SWOT Analysis Based on TOPSIS Criteria

A SWOT analysis is carried out, as presented in Table 9, in accordance with the criteria used in the TOPSIS model, which include the business unit, workforce, production value, investment value, and turnover.

Table 9. SWOT Analysis Based on TOPSIS Criteria

TOPSIS	Strength (S)	Weakness	Chance (O)	Resistance
Criteria		(W)		(1)
Business	Business	The number	The number of	The technolog
unit	units are easy	of business	business units	used is difficul
	to set up and	units is	is unstable	to develo
	develop	unstable	because the	because it i
		because the	business easily	still traditional
		business easily fails	fails	
Labor	Using family labor	Low labor skills	Opportunities for workers to improve their skills	The costs of improving the quality of labor are limited

Production value	Potential increased production value	Productivity value is still low	High opportunity to drive high productivity improvements	The technology used is still low for increasing production
Investment	The	The	It is open to	The return
value	investment	investment	many	on
	value is easy	value has a	investors to	investment is
	to increase	low level of	invest because	small, so
	because the	profit	the amount is	investor
	amount		small	attraction is
	required is small			low
Turnover	Potential	Turnover	The	The business
	turnover to	fluctuates	opportunity	scale is still
	increase	depending on	for turnover to	small, so
		the	increase is	turnover is
		cycle/season	large through	difficult to
			multi-media	increase
			marketing	quickly

Source: Data processed, 2023

2. SWOT-TOPSIS development strategy analysis

Formulation of a development strategy after a TOPSIS-based SWOT analysis is carried out where the criteria used by TOPSIS become the basis for strengths, weaknesses, opportunities, and obstacles. The development strategy analysis is in Table 10 below.

Table 10. SWOT-TOPSIS Development Strategy Analysis

Criteria	SWOT-TOPSIS Development Strategy Analysis
Business unit	Business expansion through product development
	through multi-flavors and various allied products
Labor	Increasing workforce competency through in-house
	training which leads to increasing product quality and
	product variety by the workforce
Production value	Creation of contemporary production designs through
	market trials so that production value can be increased
Investment value	Assistance with program facilities with low capital costs
	and easy access so that investment can be increased
Turnover	Expanding market share through multi-media marketing
	and market breakthroughs through contemporary
	products in both taste and form

Source: Data processed, 2023

Discussion of Findings

The research results show that the mainstay food industry chosen is the nuts industry, a food crop agricultural product. This product is a processed food that can be enjoyed as an additional meal or snack, so this product requires a taste and appearance that is attractive to consumers (Kurniawan et al., 2020). Therefore, entrepreneurs in the food industry must be creative in processing the products they produce by following changes in contemporary consumer tastes with various tastes and attractive appearances. It means that innovation in the food industry must continue so that industry development has an impact on the economy (Dudin et al., 2015). In addition to increasing food industry production, it is also necessary to pay attention to increasing efficiency and using technology (Gandhi & Zhou, 2014).

In line with the development of flagship food industry products, market research, and raw materials that are environmentally friendly and do not damage consumer health are also needed. Apart from that, the government must also help entrepreneurs in the food industry to provide capital at a low cost and make it easily accessible to entrepreneurs. Additionally, the quality of superior food industry products must be improved by market demand (Budi et al., 2009). Fadhil et al. (2018) also observed that quality improvement requires government support and university research institutions.

Conclusions and Recommendations

There are five business groups in the food industry in Batang Hari Regency, namely tubers, fruit, plantation products, river products/fish, and processed nuts. Of the five business groups, the processed nuts business group food industry was selected as the mainstay food industry. The strategy for developing a group of processed nuts businesses as a mainstay food industry in Batang Hari Regency can be carried out through the development of multi-flavor products and various products, increasing workforce competency through in-house training, creating contemporary processed products through market trials, providing credit facility assistance with cheap and easily accessible capital cost programs as well as market expansion through multi-use and new market breakthroughs.

Three recommendations need to be implemented for the selected food industry. First, it is necessary to improve the competence of entrepreneurial labour and managers to creatively create current product variations and multiracial products that attract new consumers. Second, it is necessary to develop multiracial production designs to improve flavour creation through market research and food labour based on environmentally friendly technology. Third, there is a need for capital support with low costs and easy access, especially for financing technology and market research, according to today's consumer tastes.

Limitations and future research

This research is limited in discussing the technical aspects of the selected food industry, especially its technological development. For this reason, future research is directed to examining the feasibility of the selected food industry from the aspect of food processing technology.

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