Developing Strategic Plan for Agri-food Processors in Bulacan, Philippines Using SWOT Analysis

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ABSTRACT

Competition among micro, small, and medium enterprises (MSMEs) in the Philippine economy intensifies as the market grows. SWOT analysis is one way to enhance a company's competitiveness. This study's objective is to evaluate the flexibility of strategic planning among agri-food-related MSMEs. It integrates SWOT analysis with traditional statistical inferences (*t*-test). A total of 50 micro and small agri-food processors took part in this study. The empirical findings reveal that agri-food MSMEs needed to maintain stability and initiatives to develop their own competitiveness because they are vulnerable and are limited by several weaknesses, despite the vast opportunities as revealed by an external analysis. Therefore, it is crucial to take advantage of the opportunities, to keep their operations stable, and to consistently address their weaknesses.

Keywords: Agri-food, entrepreneurs, strategies, SWOT.

1. INTRODUCTION

Micro, small, and medium enterprises (MSMEs) in the Philippines are vital to the nation's economy. According to the Philippine Statistics Authority (PSA, 2021), the List of Establishments (LE) for 2021 enumerates 1,080,810 businesses in the country. The vast majority (99.58%) are micro-businesses, whereas only a small fraction (0.42%) are large businesses. In 2021, the top five industries with the greatest number of MSMEs were as follows: (1) wholesale and retail trade; automobile and motorcycle repair; (2) accommodation and food service activities; (3) manufacturing; (4) other service activities; and (5) financial and insurance activities. (Department of Trade and Industry, 2020)

According to Food Industry Asia (2021), the Agricultural production, food and beverage (F&B) manufacturing, and food and beverage (F&B) distribution are the three components of the agri-food sector. The agri-food industry contributed USD 126.7 billion to the Philippine economy in 2019 (in 2020 prices), equal to 29.8 percent of GDP. In 2019, the industry supported 18.0 million jobs, or 42.7% of the national total, making it the most important source of employment in the economy. In addition, the agri-food sector generated approximately USD 17.1 billion in taxes in 2019 (USD, 2020 prices).

Food and beverage manufacturing has the greatest impact on the economy among the three sub-industries. It contributes more than half of the GDP and it generates 46% of employment.

Between 2015 and 2019, the agri-food sector grew steadily, with F&B manufacturing and distribution growing at a particularly rapid pace. However, the Philippines' trade balance for food and beverage goods has deteriorated due to a weakening peso (currency) and relative under-performance of agricultural production. In 2019, the country was a significant net importer of food and beverages. Factory closures, supply chain constraints,

and restrictions on food distribution outlets all hampered the performance of the agri-food sector in 2020.

A company's potential to achieve sustainable development is influenced by three key variables, with laws and regulations as one of them (Kuo et al., 2022). Aside from the above-mentioned challenges, the Philippines, as an ASEAN member, is now experiencing the benefits and drawbacks of signing ASEAN free trade agreements with other Asian nations, which are radically altering the global sourcing and manufacturing landscape. It has a treaty with China that effectively eliminates tariffs on nearly 8,000 product categories, or 90% of imported goods (ASEAN, 2014). Consequently however, the implementation of the free trade agreement has opened the market to international food processor competition.

In addition to monitoring the external environment, F&B manufacturers keep an eye on organizational and managerial factors, production and operations, marketing, and finances. Many businesses are concerned about their ability to properly strategize in order to remain competitive and sustainable in the face of numerous challenges in their business operations.

Strategic management is the continuous process of creating, implementing, and evaluating decisions that assist an organization to achieve its goals. Strategic management enables an organization to be more proactive than reactive in shaping its own future; it enables an organization to initiate and influence activities rather than simply respond to them, and thus exert control over its own destiny (GÜREL, 2017).

This research aimed to analyze the internal and external environments of the agri-food processors in 3rd District of Bulacan and to develop strategic plans for the implementation of effective strategic management.

2. METHODOLOGY

2.1 Location of the Respondents

Based on the list from the Department of Trade and Industry-Bulacan Provincial Office, there are at least 100 F & B manufacturers operating in the study area. The research is limited to the F&B Manufacturers in the 3rd District of Bulacan. A total of 50 MSME owners engaged in agri-food processing and located in the 3rd district of Bulacan were selected as respondents for this study. A non-random sampling method and the use of stratified convenience technique were employed in this study.

2.2 Data Collection Method

Face-to-face interviews were conducted with those respondents who were available during the survey. Those who chose to answer the question online were notified via their social media accounts by providing a link to the Google form. The questionnaires included factors that assess the internal and external environments of the agri-food processors. The five-point rating scale, with 5 being the highest and 1 being the lowest, was used to rate the various factors. Characteristics such as educational attainment, sex, and attitude toward strategic planning were collected. The distributed questionnaires were collected and consolidated as single dataset for this study.

2.3 Data Analysis

The data gathered was analyzed using the SWOT analysis method. A combination of qualitative and quantitative research methods were used in this study. The qualitative research method served as the primary method and quantitative research method served as the secondary method. SWOT analysis was use strengths and weaknesses, as well as opportunities and threats, were determined using quantitative method.

The study also tested the hypothesis by determining the difference between the scores for the business's internal strengths and weaknesses and the opportunities and threats it faces from the outside. It was hypothesized that the internal and external mean scores are at least three. One sample test was employed for this case to determine whether the mean score significantly differs from 3. The following formula was utilized using the SPSS software.

$$t = \frac{\overline{X} - \mu}{\frac{s}{\sqrt{n}}}$$

3. RESULTS AND DISCUSSION

3.1 Socio-Demographic Profile

Table 1 shows the socio-demographic profile of the respondents. The majority of MSMEs in the agri-food sector (38 out of 50) are classified as micro-sized businesses. According to the definition in Republic Act No. 9501, or the Magna Carta for MSMEs, micro-enterprises have between 1-9 employees and an asset size of up to PHP 3 million pesos. Small businesses have between PHP 3-15 in assets and between 10-99 employees (Senate of the Philippines, 2012).

Females own 41 of the 50 businesses in the agri-food sector. More than half of those polled have completed college and have degrees in business management. However, when asked if they were adapting their strategic planning, the majority (36 out of 50) indicated that they were not.

Table 1. Socio-Demographic Profile of the Respondents

Item	Frequency	Percentage
MSME Classification		
Micro	38	76.00
Small	12	24.00
Total	**50**	**100.00**
Sex		
Female	41	82.00
Male	9	18.00
Total	**50**	**100.00**
Educational Attainment		
HS Undergraduate	3	6.00
HS Graduate	7	14.00
College Undergraduate	26	52.00

College Graduate	14	28.00
Total	**50**	**100.00**
Strategic Planning Adaptation		
Yes	14	28.00
No	36	72.00
Total	**50**	**100.00**

3.2 Internal Factor Analysis

Table 2 provides a summary of the Internal Factor analysis performed on 50 MSMEs in the agri-food industry. Each factor received equal weight. The responses' ratings were averaged, and the middle method was used to classify strengths and weaknesses. Those with >3 average was considered strong, while those with <3 average was considered weak. The analysis reveals that nine (9) of the 16 indicators of strengths and weaknesses pertain to the strengths factor, while seven (7) are regarded as sources of weaknesses among entrepreneurs. The highest rating was given to product development among the strength factors. Production capacity had the lowest score for weaknesses.

Table 2. Internal Factors Matrix

Internal Capabilities	Indicator	Score	Std. Deviation	Classification
Human Capital	Entrepreneurial spirit	3.90	0.94	Strength
	Motivation	3.54	0.67	Strength
	Skills	2.92	0.97	Weakness
	Visionary	2.80	0.83	Weakness
Financial	Internal Budgeting	3.70	0.9	Strength
	Financial Literacy	3.58	1.11	Strength
	Financial Recording	2.72	1.23	Weakness
	Financial Management	2.78	1.22	Weakness
Technical/Operational	Sources of Materials	2.86	1.32	Weakness
	Production Capacity	2.64	0.83	Weakness
	Tools and Machinery	2.66	0.83	Weakness
	Quality Control	3.56	0.77	Strength
Market	Product Development	4.30	0.91	Strength
	Distribution/Channel	3.62	1.01	Strength
	Pricing	3.48	0.94	Strength
	Promotion	3.84	0.67	Strength

3.2.1   Strengths and Weaknesses

Entrepreneurial spirit and motivation were rated as human capital strengths. Filipino agri-food processors have strong entrepreneurial mindset, above level of creativity and motivated to become successful in their business operations.

However, their limited financial resources rendered their resource management ineffective. This is corroborated by the report of the Philippine Commission for women (2020) stating that most firms have cited cash flow as one of the troublesome in their operations.

Also, the lack of financial recording is considered a weakness, as many of them do not record their finances on a regular basis and are therefore unable to monitor their performance. They also lack financial records or collateral which are often required by lending institutions. Majority of them are not banked; they have no credit history, no assets for collateral, and they lack requirements that big financial institutions consider as "high risk" when applying for a loan (PearlPay, 2022).

In terms of technical operations, the source of materials is a major concern, especially for those whose main raw materials are pork. The African Swine Flu problem in the country restricts their output since they are mostly dependent to imports. On the other hand, for some MSMEs whose raw material requirement are locally sourced, this becomes an advantage to them because of their accessibility. Additionally, the limited financial resources of the MSMEs restrict their capacity and their use of modern facilities, and many of them continue to rely on manual labor. The smallness of production affects their profitability as corroborated in the study of Susan, Winarto, and Gunawan (2022).

In relation to marketing, each of the 4Ps (product, prices, promotion and place of distribution) is considered a strength. As Filipinos are renowned for their creativity, product development is a major source of strength. In addition, they have innovative and creative development ideas. Also, they are promoting their products on social media platforms. The rise of online selling has been good for their business because they can now reach bigger markets through advertising and distribution. In the study of Muljadi et al. (2022), they explained the influence of social media marketing on consumer behavior is substantial and positive). Moreover, according to the World Economic Forum's (WEF) latest ASEAN Digital Generation Report 2021, MSMEs in the Philippines recognized the critical role of digitalization in economic recovery from the pandemic (Simeon, 2021).

3.3 External Factors Analysis

Table 3 summarizes the External Factor analysis conducted on 50 agri-food processors. Each factor was given equal consideration. The ratings of the responses were averaged, and the middle method was used to categorize opportunities and threats. Those with an average score of >3 were classified as opportunities, while those with an average score of 3 were noted as threats. According to the analysis, the majority of the 15 external environment indicators fall under the opportunities category, while only four (4) are regarded as threats by business owners.

Table 3. External Factors Matrix

External Aspect	Indicator	Score	Std. Deviation	Classification
Political, Economic and Social Aspect	Political condition	3.26	1.24	Opportunity
	Economic Condition	2.96	0.95	Threat
	Social factor	3.24	1.2	Opportunity
	Consumer behavior	3.32	1.19	Opportunity
Government Aspect	Public services	3.02	1.02	Opportunity
	Enterprise incubation	4.10	1.09	Opportunity
	Enterprise empowerment	4.36	0.83	Opportunity
	Regulation	3.14	1.07	Opportunity
Financial Institution Aspect	Financial Assistance	3.58	1.21	Opportunity
	Monitoring and Evaluation	2.84	1.25	Threat
Technological	Technological Development	3.86	1.11	Opportunity
Competition	Local Competition	2.66	1.17	Threat
	Internationalization	2.64	1.22	Threat
	Free Trade	3.08	1.21	Opportunity

3.3.1. Opportunities and Threats

The major sources of opportunities, as identified by the respondents, are strong government support in terms of enterprise empowerment and incubation. This is evident in the programs provided by the various national government agencies like the Department of Trade and Industry (DTI), the Department of Agriculture, and the Department of Science and Technology (DOST).

The Philippine government strongly supports the MSMEs as stated in the MSME Development Plan 2017-2022 and envisions for a more globally competitive SMEs that are regionally integrated, resilient, sustainable, and innovative, thereby serving as key drivers of inclusive economic growth in the Philippines. The MSME Development Plan 2017-2022 focuses on three areas: (1) business environment, (2) business capacity, and (3) business opportunities (Department of Trade and Industry, 2017).

The government continuously assists MSMEs in product development, market development, and capacity development of owners and workers. DOST promotes technology upgrading and adaptation through SETUP, DTI's shared service facility, trade fairs, and DA's loan programs, trade fairs, and market linkages. Through the DOST's SETUP, or Small Enterprise Technology Upgrading Program, firms are urged to implement innovations that will enhance their products, services, and operations, thereby boosting their productivity and competitiveness. The SMEs can access appropriate technologies, human resource training, functional packages and labels, a database

management system, and technology acquisition. Under the DTI, SMEs can access product development and promotion services, market linkages, and export servicing assistance. Further, the enterprise can also avail of market and supply linkages, trade promotion, and credit facilitation services under the Department of Agriculture.

Technological development in the country is another opportunity considered by the respondents. Nowadays, technology advancement is accessible even to SMEs. These technologies include the incorporation of various software and hardware applications that can improve inventory, processes, communication, payments, database management systems, registrations, and product development productivity and efficiency.

One threat that they are concerned about is competition. New competitors continuously emerge, further populating the market. The threat of competition is prevalent in the agri-food industry. Bulacan agri-food processors face competition from small players to large brands in both local and international markets. This finding validates the research results of Lumbanraja et al. (2019) wherein the competition in the Medan, Indonesia is one of the many threats to their operations.

Small and medium-sized enterprises that rely heavily on imported pork are also affected by the ASF. Importers' preference for larger factories was also cited as a factor limiting the enterprise's access to raw materials; as a result, the business encountered supply shortages.

3.4. Results of the Statistical tests

The descriptive statistics of the internal and external factors of agri-food processors are all shown in Table 4. It can be clearly seen from the table that the mean score of external factors, equal to 3.29, is greater than the mean score of the internal aspect, equivalent to 3.2471. The sample mean is dispersed around the hypothesized mean ($\mu = 3$) by what appears to be a small amount of variation.

Table 4: Descriptive statistics of the internal and external factors of agri-food processors.

Item	N	Mean	Std. Deviation	Std. Error Mean
External factors	14	3.29	.51773	.13837
Internal factors	14	3.2471	.53589	.14322

Table 5 presents the results of a one-sample t-test. The second column shows the observed t-statistic for each sample. This statistic is calculated by dividing the difference between the two means by the standard error of the sample with 13. The value listed is the probability of obtaining an absolute value greater than or equal to the observed t-statistic. As shown in the table, the t value of the external factor (t = 2.096) significantly differs from the hypothesized mean ($\mu = 3$) since the p-value (Sig. = 0.049) is less than the 0.05 level of significance. However, the table also shows that the t value of the internal factor (t = 1.726) significantly differs from the hypothesized mean ($\mu = 3$) since the p-value (Sig. = 0.108) is less than the 0.05 level of significance. Thus, it can be concluded that the difference between the mean score and the test value in internal factors is purely random.

Table 5: Difference Between the Scores of the Internal and External Factors

Item	Test value of $\mu = 3$					
	t	DF	Sig. (2-tail)	Mean difference	95% Confidence intervals of the mean difference	
					Lower	Upper
External factors	2.096	13	.049	.29	-.0089	.5889
Internal factors	1.726	13	.108	.24714	-.0623	.5566

3.5 The Strategy Formulation

3.5.1. Strength-Opportunity Strategy

The strength-opportunity strategy leverages its strengths to capitalize on external opportunities. In the case of Bulacan MSMEs in the agri-food sector, they should improve their entrepreneurial behavior to take advantage of the government's strong support. Furthermore, strengthening their policies on quality control and continuous product development using available modern technologies would delight customers. As a result, MSMEs will benefit from increased sales.

3.5.2. Strength-Threat Strategy

The strength-threat strategy relies on its own advantages to protect itself from the surrounding environment's dangers. In every market, competition is a problem, but it can be mitigated through the introduction of new products and effective promotion strategies.

3.5.3. Weakness-Opportunity Strategy

The weakness-opportunity strategy can be implemented by overcoming weaknesses and capitalizing on external opportunities. A lack of financial capital can be compensated by financing. MSMEs, on the other hand, should keep close track of their business records. To track their business performance, these must be properly recorded and filed. Moreover, these records should be compiled and may be used as requirements when loans are available.

The loan proceeds can be utilized to increase production, buy raw materials in bulk, and purchase machines with cutting-edge technology.

3.5.4. Weakness-Threat Strategy

The Weakness-threat strategy can be done by minimizing weaknesses and avoiding threats in its external environment. Maintaining production quality, expanding existing skills, and planning price and promotion strategies are all critical for the interviewed MSMEs in the agri-food sector in the 3rd District of Bulacan to survive the increasingly stiff competition in the market.

4.   CONCLUSIONS

Micro, small, and medium-sized enterprises in the agri-food sector benefit the economy. Their functionality, however, is dependent on both their internal and external settings. Despite the numerous benefits, there are several factors that could potentially impede their operations, according to the findings. As a result, it is critical for agri-food processors to routinely assess their processes, keeping and improving the areas where they excel while eliminating or reducing the ones where they fall short.

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