

# The Feasibility Study for the Investment Project in Production Processed Chicken: A Case Study

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## Abstract

This research aims to study the current activities, and operations of the processed chicken products and to study the feasibility of an investment project in the production of this process of the case study company. The population in this study was those involved who are directly responsible for the investment project of processed chicken products. The tool is a semi-structural interview that collected the data research by applying the value chain concept and the feasibility study of the investment project. The data analysis of this research is to measure the results and make an investment decision. The finding found the value chain operations show deficiencies in activities and lost revenue of sales opportunities. The feasibility study is considered in an investment project to assess the feasibility of all three aspects. Firstly, the marketing manner found the low production cost of the product cost and the opportunity to technically competed in the market. Secondly, the production process and capacity included the machine tools used that are suitable for the ability production volume with the sufficient to support future demand trends. Finally, the finance manner found the project uses an initial investment of 8,710,000 baht, a project lifetime of 5 years. The net present value of 6,832,048.71 baht. The payback period of 2 years 1 month 11 days, and a rate of return within the project as a percentage of 43.64% Therefore, this feasibility of an investment project in processed chicken products is suitable for investment.

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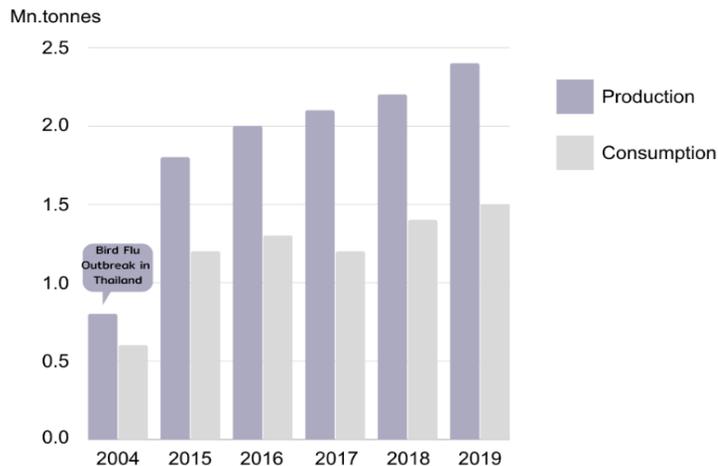
**Keywords:** Investment project, Processed chicken products, Chicken value chain analysis

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## Introduction

Thailand had the 8<sup>th</sup> highest broiler production in the world in 2019 at 2.36 million tons. Meanwhile, the consumption of chicken meat was 1.51 million tons or approximately 62% of the total broiler production as shown in Figure 1 (Office of Agricultural Economics, 2021). The consumption is mainly based on slaughtered fresh chicken meat. The remaining broiler production will be used as an ingredient in the processed chicken industry to add

value. The main market is the export market where Thailand is the world's biggest exporter with the 1<sup>st</sup> and 5<sup>th</sup> export value ranking in the world which is 28.9% of processed chicken exports in the world market (Krungsri Research, 2021). Chicken exports in Thailand are in the form of processed chicken, frozen chicken and chilled chicken. The major export markets are Japan (50% share of total processed chicken exports), the United Kingdom 28%, Netherlands 6.0%, South Korea 5.1%, and Singapore 2.9% (Krungsri Research, 2021).



**Figure 1** Chicken meat production and chicken meat consumption in the country.

Source: Office of Agricultural Economics (OAE), Krungsri Research

The food processing industry is one of the main industries that is an important driving force for the country's economy. Moreover, there is a high market share ranked in the top 10 in the world and also a tendency rate to grow continuously. This is because Thailand has abundant resources, various food sources, and a stable production base. As a result, it causes advantages and remarkably

increases the competitive potential of the products in the world market. (Eastern Economic Corridor, 2019). The frozen and processed chicken industry continued to grow, reflecting the domestic demand for chicken meat at 1.51 million tons or approximately 62% of total chicken meat production. An increase of 7.7% is partly due to low chicken meat prices which are lower than



other types of meat. Nowadays, consumers are increasingly focusing on low-fat meats. In the export market, Thailand increasingly exports chilled chicken products, frozen chicken, and processed chicken by 7.5% in quantity and 8.5% in value (Krungsri Research, 2021).

Meat processing is currently a popular alternative food product. This is because people's way of life nowadays is completely rushed. It means there is less time to buy and cook food by yourself. Therefore, eating needs more convenience, speed, and ease of cooking. Consequently, processed food products market and ready-to-eat food are in increasing demand and can be consumed immediately (Orawin Lelesharatthan, 2002). There are various types of meat processing. In this case, researchers would like to give an example of food processing that used chicken meat as the main ingredient. Factors that make most industries prefer to produce chicken meat into meatballs because it is cheaper than other types of meat (Pimjan Huanarom, 2020) and it can also increase both the value and profit. As a result, the food processing business has been expanding and growing widely.

The case study company is one of those companies interested in investing in the food processing business. The main business is Butchering chicken, which is the main ingredient in processed food production, researchers see an opportunity to invest in a business by creating new products coming from surrounding observation from the existing cost to develop, improve, and maximize profit to the company. There is a way by applying the logistics concept to study the current conditions of the case

study company to see activities, processes and operations as a basis for analyzing the feasibility study of investment projects in various fields to make decisions and assess the project feasibility whether there is a chance of success or suitable for the investment. The results from this study will be beneficial for the case study companies in a practical way by applying this research concept to expand the business. Therefore, these research objectives are to study the current conditions, activities, and operations of the case study company. Additionally, we aim to study the feasibility of an investment project for processed chicken products with the study scope focusing only on the feasibility of the project in 3 main areas, which are, the marketing, technical, and financial aspects of the case study company only. The project feasibility studies will differ according to the type and qualities of the project. In this case, the most profitable private sector project will focus on analyzing marketing, technical, and financial projects as a tool for consideration before deciding on investing in any projects (Pakorn Priyakorn, 2014).

## Literature review

The study feasibility of a processed chicken products investment project, together with the principles of value chain analysis to enhance the product as a guideline. The researcher has classified the concepts and theories used as a study guide which consists of;

1. Concepts and theories related to the feasibility of an investment project. Aiming to know the results of the project implementation according to the



objectives set by considering the marketing, technical and financial studies of the company for use in decision making of investment projects whether it should be invested or not (Chantana & Sirichan, 1989). In deciding which project to invest in, the cost-effectiveness of that project is measured by comparing the return and cost of the project in the form of project analysis to consider the suitability and feasibility of both financial. But, the interesting point is how to measure the benefits and the cost of those projects (Chuchee Phiphatsithi, 1997).

It usually starts with an analysis of the marketing project to ascertain whether the product to be produced is marketable or not to determine the appropriate production scale. Tools, machines, equipment, materials and raw materials that are required for production are determined at low production costs. Depending on the project objectives and the information obtained, the project cost estimates are taken and then the project finances are analyzed to estimate the expected return that is worthwhile for the investment cost (Sukhothai Thammathirat Open University, 2015)

2. Concepts and theories related to an investment project analysis are feasibility studies to ensure that the business can be carried out to achieve the set objectives. By applying the theory of feasibility studies in various fields to be applied to the project as a tool for analysis in advance until concluding implementation of the project whether we should operate the business or not. By analyzing the project in 3 main areas; *Marketing analysis* to ensure that when the product is produced, it will be in demand of the market or there is market

support. This demonstrates that the project will be able to provide a worthwhile return on the investment (Warot & Sanhanat, 2019). by utilizing SWOT Analysis as a tool to analyze the corporate conditions and business environment to identify strengths, weaknesses, opportunities and obstacles both inside and outside the corporation. This allows to set direction and create a driving force to the goal (Somkid Bangmo, 2010). Moreover, it is an alternative to find a way to create business advantages and avoid failure from factors that probably be easily overlooked. This will lead to an understanding of factors that influence work and increase efficiency for the company.

*Technical project analysis* helps to determine the feasibility of a project, whether the project has an economical production process technique, can estimate production costs or expenses in the production process, including the matter of choosing a production model, machinery, equipment, raw materials and labour. Therefore, accuracy and precision in technical project analysis are required as it affects the accuracy of other project analysis (Wasiwat Wasinsombat, 2015). *Financial analysis* is an analysis to assess the potential of a project as investment viability, earnings and if the return is worth for investment. Including planning the budget throughout the project to ensure that if the project is carried out there will be no financial problems that cause the project to stop by considering details such as project costs, income statement, statement of financial position and then used to analyze financial ratios, which are a tool that indicates whether this project is suitable for investment or not, as follows:



1. Net Present Value is the sum of the time-adjusted net returns for the project. It is calculated to measure whether the project under study is providing a worthwhile return on investment or profitable to total cost or not. In other

words, it is a calculation comparing the present value of the cash inflows and cash outflows of the project by using the discount rate (Dej Kanchanangkun, 1998)

$$NPV = \left[ \sum_{t=1}^n \frac{B_t - C_t}{(1 + r)^t} \right] - I$$

or

$$NPV = \text{Present value of the return (PVB)} - \text{Present value of expenses (PVC)}$$

The criteria for selecting investment projects are considered as follows:

- 1) NPV Positive is that the project is accepted because the project under consideration provides more benefits than the money invested.
- 2) NPV equal to zero means the project is accepted or not accepted the project because the project under consideration provides benefits equal to the money invested.
- 3) NPV Negative means not accepting the project because the project under consideration gives fewer benefits than the money invested.

2. Payback Period is a calculation of the investment period, in the number of years, that the investors will receive the money invested back from the investment. This is a primary assessment to estimate the period that the project will take to break even. It is calculated by adding the net cash flows from each year's investment together until the total amount is equal to the investment and also sums the number of years altogether. The decision criterion based on this tool is acceptable only if the payback period is shorter than the specified time (Philip Adelman, 2004).

$$PB = \text{number of instalments before the payback year} + \frac{\text{The amount that has not yet been revinue}}{\text{Sted in net cash flow in the year of payback}}$$

The criteria for selecting investment projects are considered as follows:

- 1. Payback period < Project implementation time = Accept project
- 2. Payback period > Project implementation time = Project not accepted

3. Internal Rate of Return is the rate of return using the discount rate to determine the net present value of cash flows of the project. It makes the total present value of cash flows equal to the total present value of the investment (Frank Fabozzi & Peterson, 2013).



$$NPV = \left[ \sum_{t=1}^n \frac{B_t - C_t}{(1 - r)^t} \right] - I = 0$$

The criteria for selecting investment projects are considered as follows:

IRR > investment is to accept the project because the rate of return received is greater than the desired rate of return from the project.

IRR = investment is either accepting the project or not accepting the project because the rate of return earned is equal to the desired rate of return on the project.

IRR < investment is not accepting the project because the rate of return received is less than the desired rate of return on the project.

3. Concepts and theories of value chain analysis It is a tool for describing all the activities a corporation undertakes. Starting from the receipt of ingredients into the system including design and product or service offerings from the concept through the production process, and processing process until there become the finished product. Finished goods are distributed to customers in the last step and there will be care management after use (Michael E. Porter,1985). Besides, there is the presentation of a Value Chain Model, which is a linkage of activities covering upstream, midstream and downstream processes that focus on every process in the value chain and take into account the creation of competitive advantages by analyzing the value chain occurred in each activity. Therefore, the value chain

is capable to connect various relationships and activities in the corporation. The objective is to create added value in the various activities in the corporate. Porter categorized the value chain activities as the main activities and the supporting activities. The main activities will be created-value activities direct to the product. While the supporting activities will connect the whole corporation as a good value chain to create great work. Both activities will help strengthen and support each other in the workplace (Yanyong Srisom, 2010).

4. Case study company general information and the production of processed chicken products

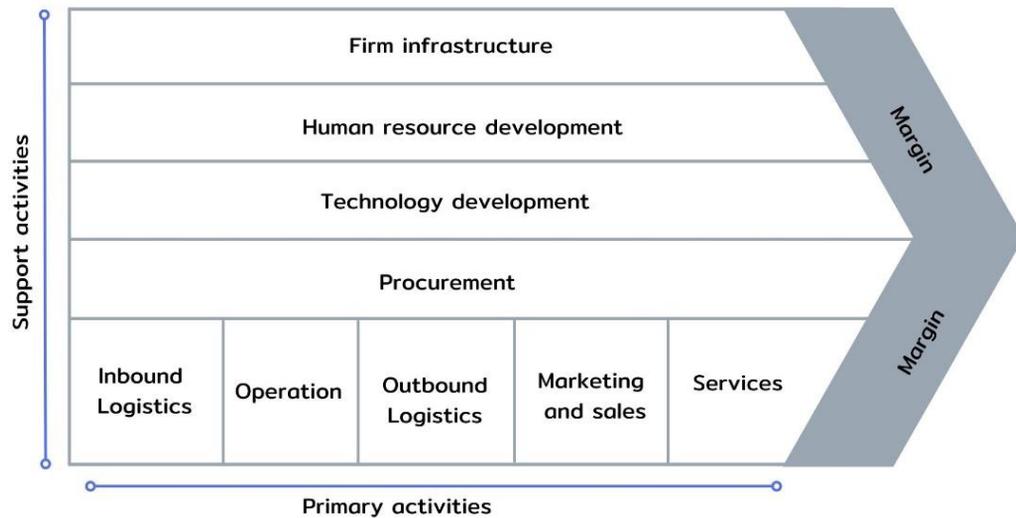
*Case study company information* the case study company's main business is chicken parts slaughtering. The main products of the company are slaughtered chicken meat, chicken parts and fresh chicken. The case study company has selected the supplier company with the most standard and comprehensive ingredients. The supplier company has a comprehensive business operation from upstream to downstream starting from qualified grandfather and grandmother chicks' selection. The chicks will consume nutritious food and be taken care of according to animal welfare in the right environment and safe from disease. Which makes it a good product for processing. The customers who order products with the case study company can be assured that the products delivered



to the customers will be great and full of quality. The case study company ordered ingredients in the average quantity of 6-8 tons per day. Most of the customers, 80% are from processed food production industries. The main ingredients ordered are slaughtered chicken meat, neck skin, cartilage, etc., and the other 20% are retail-wholesale customers. The main ingredients ordered are fresh chicken, chicken parts, etc.

*General information about the production of processed chicken products.* Definition of meat product processing Meat processing is the alteration of fresh meat by one or more combinations of methods to transform meat into a ready-to-eat product. Therefore, meat processing consists of preserving food which means preserving food by various methods to keep its condition as fresh as possible without losing quality and nutritional value. Additionally, it also includes food processing. This is the process of taking food through various processes to obtain the desired product with quality and can be accepted by the consumers and safe. The definition of meat processing probably covers the processing of fresh

meat for consumption, production and storage of meat products. Meat processing is the production of meat products to extend shelf life, and preserve and add value to meat by transforming the process from fresh meat to ready-to-eat meat (Yaowalak Suraphanthaphisit, 1997). Definition of meatballs Meatballs are the food that people consumed widely. Because it is delicious, easy to find places to buy and can be added to many menus. It is popular among restaurants or shops in the market. They use it as a snack or an ingredient in a dish. This leads to vastly occurrences in meatballs businesses such as fried meatballs shop and meatballs factory. Both large and small operators are accelerating production to meet the market demand. Consequently, it is a low-cost and profitable business. However, the production process must be controlled by the hygienic arrangement of the building, the production site, the cleanliness of the equipment and machinery used, the quality of ingredients, and the cleanliness of the touch. All of these will affect the cleanliness and safety of meatball products and consumers (Nophaphan & Weerapol, 2014).



**Figure 2** the value chain model of Michael E. Porter

## Research methodology

This research study is an investment project analysis utilizing an in-depth interview method for finding the data. The semi-structured interview is used as a tool to collect data for an in-depth interview with key informants who are directly responsible for the feasibility study project investment in processed chicken products. There is an accessible population study in which all information units are completely qualified according to the type of the target population including executives, general managers, purchasing managers, sales managers, production managers, marketing managers, financial managers, head of sales, head of production and employees in the total amount of 10 people. The research tool of the interview was examined by the Index of Conformity (IOC) to calculate the Validity value by

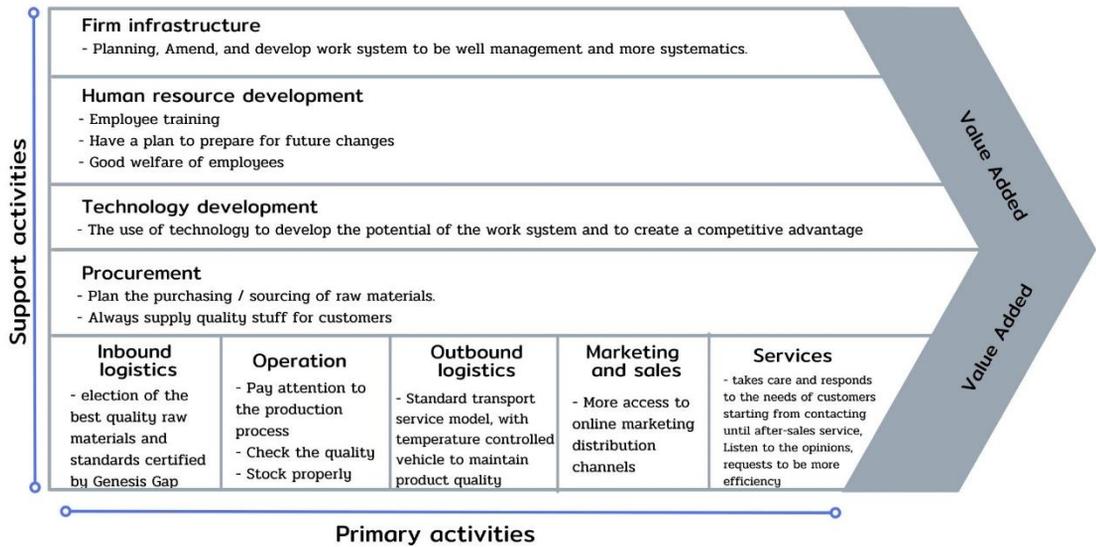
considering the consistency between the questions and objectives and letting the experts examine according to the methods of (Rovinelli & Hambleton, 1977)

According to the data analysis process, researchers have reviewed articles and research papers about value chain concepts and feasibility study of the investment project as a research framework along with main information from in-depth interviews to help create an understanding of the procedure of studying the current conditions, activities, and the operations of the processed chicken products. When the data is ready, researchers have conducted the content analysis and analysed the feasibility study of the investment project in 3 aspects to measure and support the decisions in selecting an investment project following the objectives of this research.

## Findings and discussions

Results of a study on current conditions, activities and operations of processed chicken production. A study on current conditions, activities and operations of

the case study company that operates a business related to slaughtering chickens by applying the concept of the value chain to consider the processes and activities within the company, which are divided into primary activities and supporting activities with details as follows:



**Figure 3** The value chain analysis from condition, activities and operations studies.

### Primary activities

*Inbound logistics* start from the company, there is the procurement of chicken cages or the main raw materials used in the production process from the complete chicken factory, from the selection of quality, strong, and well-bred grandparent chicks that are raised with care by the principles of animal welfare. This will result in broilers growing faster. There is a suitable yield for the production of processed food products. The factory is also certified for quality by

Genesis Gap, an EU standard and partner standard for chicken meat production for export which ensures that the company purchases raw materials from the factory with the best quality and standards in the storage of raw materials It will be stored in the cold room at the appropriate temperature to maintain the original condition of the product and prevent spoilage since the product is fresh and the cold room is installed near the chicken slaughter room for quick convenience in Moving raw materials into the production



process. *Operations* are the activity that is the beginning of the production process where the company's main product is slaughtered chicken meat which the first step is to cut the chicken breast into different parts such as the breast meat, the rump, the neck skin and the cartilage, etc. Then there is the chicken meat quality inspection department divided into 2 parts: quality chicken meat and chicken pieces that are not of good quality. The criterion for quality chicken meat is that it has less bone and less fat. Once it is checked that it meets the criteria, quality chicken pieces are sent to the next production process, the forging of the chicken meat, Season with salt, weigh by weight and packed into packaging. The chicken pieces that are not of good quality will be rejected and discarded immediately upon completion of the production process. The company has stored the products in the freezer for the products that customers come to pick up immediately and keeps them in the cold room for customers who want to receive-deliver the products the next day. Good storage helps to maintain product quality and prolong the service life of the product to make sure that the product is efficient when delivered to the customer, which is important for fresh food product

*Outbound Logistics*, distribution of products to industrial plants or customers in the market. There are 2 types: one, the customer comes to pick up the product themselves. Second, the company has a delivery service. The service vehicles will have general cars and cold storage cars. The method of transportation depends on the number of goods and the distance of transportation. In the case of long-distance transport, refrigerated trucks will be used because they can

maintain the same product quality from the start to the destination. *In marketing and sales*, the product does not have a distinctive point or selling point that is different from the product in the general market. Most of the target groups are fresh market customers and industrial factories. There are different prices for retail-wholesale products based on market prices. The current distribution channel is just ordering through the company's Line application and in the future, there is a tendency to increase distribution channels for products by studying sales through online channels more. *Services*, the case study company takes care and responds to the needs of customers starting from contact until after-sales service. Some employees receive complaints, listen to opinions and survey customers' needs periodically to consider improvements and develop work processes to have good efficiency.

## Support activities

*Procurement* is an important part of promoting the work of the main activities to add value to the product. The company plans to procure raw materials, consumables or other production factors used in the production process to be able to meet the needs of customers on time. *In technology development*, the company has not developed or introduced any new technology, usually using the old technology such as taking notes by hand, writing forms on paper and communicating through common applications, etc., which causes the disadvantage is that data may be incorrect or lost. Therefore, applying technology to suit the company is necessary to increase the efficiency of work processes in the company. *Human*



*resource management*, training is provided to employees every month to make the employee can learn every work process to increase their skills and if there is a transfer of work duties, employees will have a well-rounded knowledge. It is not only the duty that they are responsible for to reduce the problem of additional employment or in the case of employees applying for leave, which is one of the plans of the company that is prepared to cope with future changes. *Firm infrastructure*, present the company does not have a comprehensive implementation of the infrastructure system, only training employees and improving the work system in the part that can be fixed at all, which still finds various management flaws that are not caused by the company's good management system.

A study of the current condition, activities and operations of the company case studies revealed that there were still shortcomings in work processes such as those in the operating procedures described above as "Quality audit

department, cut out the chicken pieces that are not of good quality and discard immediately." Therefore, to reduce wastage and increase the value of the chicken pieces by bringing the chicken pieces that have been removed to be processed into products. The opportunity from the aforementioned activities led the researcher to consider the feasibility study of the investment project to assess the feasibility and to make a decision on the investment project. The results of the feasibility study of the investment project for processed chicken products were shown in 3 aspects as follows:

The results of the feasibility study of the investment project for processed chicken products. *Firstly, in Marketing*, according to the information obtained from an in-depth interview with key informants who are fully involved and directly responsible for the project, researchers have analyzed the content by utilizing SWOT Analysis as an analytical tool to visualize both inside and outside corporate environment more clearly which categorized as follows:



**Table 1** SWOT Analysis

| <b>Strengths</b>  | <b>Weaknesses</b>   |
|---|---|
| S1. Low production cost   | W1. As a new product of the company, it may not be known in the wider market. |
| S2. There are additional raw materials or ingredients in the product to have a new form that is different from the general product. | W2. The product is similar to the existed product in the market.              |
| S3. Maintaining product standard  | W3. The company has a variety of products.                                    |
| S4. The company has a long experience in the field of chicken slaughter.  | W4. Packaging is not attractive to consumers.                                 |
| S5. There is a production planning process.   | W5. No online distribution channel.   |
| S6. Personnel have many years of work experience.   |   |
| S7. There are standard tools and machines.  |   |
| S8. Building a good relationship with customers.  |   |
| <b>Opportunities</b>  | <b>Threats</b>  |
| O1. The change in consumer behaviour.   | T1. Competition conditions within the same industry.                          |
| O2. Distribution channels in the current market include modern technology.  | T2. The price of production cost increases.                                   |
| O3. The trend of processed food consumption.  | T3. Thailand's economy tends to slow down.                                    |
| O4. The market for processed food products has the opportunity to grow continuously.  | T4. Effects of an epidemic.   |
|   | T5. The market size of processed chicken products is large.                   |

Table 1 shows the SWOT analysis of the company. The analysis of the environment inside the organization and the environment outside the organization can be described as follows: Environment inside the organization, the company has a long experience in chicken slaughtering, providing a comprehensive understanding of all processes of the supply chain from upstream to downstream. The company has a low production cost which is the production of goods of equal or better quality. In addition, raw materials or ingredients are added to the products to make them new and different from other products in the market. As for the personnel who have experience and expertise in the production process, including tools and machines that have standards that can be used for the purpose with the most efficiency. Most importantly, build a good relationship

with customers by focusing on the importance of creating satisfaction for customers. In terms of product development, service and after-sales service. The weakness or shortcoming of the company is that it is a new product and cannot produce a wide range of products. The products are not well known in the broad market and cannot be comprehensively targeted to consumers in the market. In addition, the company does not have online distribution channels causing a lack of direct communication with the target group.

The environment outside the organization, and marketing opportunities due to changing consumer behaviours with more interest in processed food products. This, causes the trend to increase the demand for purchasing as well as it can meet the convenience of consumption, resulting in the product being popular and the overall



market continues to grow. Including distribution channels in today's market with modern technology play a role in life. This allows consumers to access product information easily and quickly. The obstacles encountered are the conditions of higher competition within the same industry. This could be a result of other entrepreneurs interested in doing the same business, or whether it was the rising cost of production due to the COVID-19 pandemic and the changing economy of Thailand tends to slow down, resulting in a decrease in consumer purchasing power.

*Second, Technical,* the production process of meatballs must consider cleanliness and safety of consumers as the primary concern. Starting from the selection of raw materials from certified sources, keeping the temperature of the raw materials appropriately before entering the production process, and going through the production process according to the rules of good food production. The optimum production capacity is 1,000-1,300 kg per day. In terms of equipment, tools, and machines, they are designed to meet industry standards. Thus, they can be used for their intended purpose. Including monthly maintenance of the machines to

keep the production process working at full efficiency and readiness performance checks before use to reduce potential disruptions. The company also trains employees to be able to learn all processes in the work, including the safety and risks that may occur in the performance of duties or even if the transfer of responsibilities occurs. This is one of the company's plans to prepare for the situation that may change in the future.

**Financial aspect** Based on the information obtained from an in-depth interview with key informants who are fully involved and directly responsible for the project, researchers have analyzed the financial projects to use the results in making investment decisions. The project budget estimations, income assumptions and expense assumptions of the case study company were used to make financial reports and to create the understanding that the project has enough working capital for management each year. Then the financial ratios are analyzed by financial tools which are net present value, payback period, and internal rate of return. These are for decision-making on investment projects for the case study company by the details as follows:

**Table 2** shows the net present value

| Year                       | Cash inflow   | Accumulated cash flow | IRR     | Discount rate (0.15) | Net present value (NPV) |
|----------------------------|---------------|-----------------------|---------|----------------------|-------------------------|
| 0                          | -8,710,000.00 |                       |         |                      |                         |
| 1                          | 4,309,720.00  | 4,309,720.00          | -50.52% | 1.15                 | 3,747,582.61            |
| 2                          | 4,434,208.00  | 8,743,928.00          | 0.26%   | 1.32                 | 3,352,898.30            |
| 3                          | 4,567,975.20  | 13,311,903.20         | 24.34%  | 1.52                 | 3,003,517.84            |
| 4                          | 4,924,466.27  | 18,236,369.47         | 36.80%  | 1.75                 | 2,815,579.57            |
| 5                          | 5,274,724.67  | 23,511,094.14         | 43.64%  | 2.01                 | 2,622,470.39            |
| <b>Total present value</b> |               |                       |         |                      | <b>15,542,048.71</b>    |

Source: from the synthesis of the researcher



Table 2 shows the net present value in the 1<sup>st</sup>-5<sup>th</sup> year project implementation of the case study company

Net Present Value The discount rate for calculating the net present value of 0.15% from the table can be calculated by

$$NPV = (-8,710,000) + 15,542,048.71$$

$$NPV = 6,832,048.71$$

Based on the calculation of the net present value of the 5-year implementation of the case study company, researchers have found that the net present value was 6,832,048.71 baht. The calculated net present value was positive, which means that the rate of return on the invested project could

generate a greater net benefit than the present value of the investment. Therefore, this project was accepted.

*The payback period* is a calculation of the investment period, in the number of years, that the investors will receive the money invested back from the investment. This is a primary assessment to estimate the period that the project will take to break even. It is calculated by adding the net cash flows from each year's investment together until the total amount is equal to the investment and also sums the number of years altogether. The decision criterion based on this tool is acceptable only if the payback period is shorter than the specified time.

Table 3 shows the payback period

| Year | Cash inflow  | Accumulated cash flow | Investment at the start of the project | Calculation result |
|------|--------------|-----------------------|--|--------------------|
| 0    | (-8,710,000) |                       |  |                    |
| 1    | 4,309,720    | 4,309,720             | 8,710,000                              | No payback         |
| 2    | 4,434,208    | 8,743,928             | 8,710,000                              | Payback            |
| 3    | 4,567,975    | 13,311,903            | 8,710,000                              | Payback            |

Source: from the synthesis of the researcher

Table 3 shows the payback period in the 1<sup>st</sup>-3<sup>rd</sup> year of the case study company

The payback period equal to 2 years

$$\left\{ \frac{8,710,000 - 4,309,720}{8,743,928 - 4,309,720} \right\} \times 12$$

$$\text{Equal to 2 years} = (0.01 \times 12) = 0.13 \times 365 = 47.45 \text{ days}$$

= the payback period equal to 2 years 1 month 11 days

From the calculation of the project's payback period, in the case study company's 5-year project implementation researchers have found that the payback period of this project is 2 years 1 month 11 days which was less

than the payback period specified in the project implementation from the investment of 8,710,000 baht. Therefore, this project was accepted.

*The internal Rate of Return* is the rate of return using the discount rate to determine the net present value of cash flows of the project. It makes the total present value of cash flows equal to the total present value of the investment from the calculation of the internal rate of return of the project in the case study company's 5-year project implementation, researchers have found that the internal rate of return of the project was 43.64% where the rate of return was greater than the expected rate



of return, with a determination of 15%. It indicates that this project could increase profit more than the cost of investment. Therefore, this project was accepted.

## Conclusion

According to the results of the study analysis of current conditions, activities, and operations of the processed chicken products of the case study company, researchers have found that errors occurred in operational activities or the production process in which the unqualified chicken is discarded resulting in wastage and lost selling opportunities. Therefore, applying the value chain concept to find ways to increase chicken meat value can help reduce wastage in this process. It can be done by bringing chicken meat into the processing process and transforming it into meatball products. This adds more value to the products than just selling fresh chicken meat. Consequently, this is relevant to the research by Natchanan Rattanamahapaisan (2021). that has applied the value chain concept as an alternative way to increase the efficiency of the value chain by processing pineapples to add value, such as pineapple pines, pineapples jams, etc. This option can extend the shelf life for a longer period.

Moreover, this option is a product upgrade and also a promotion of transforming the product into a novelty which can help to increase more value of the product. Marketing aspect Based on the analysis of the marketing feasibility study of processed chicken products investment project of case study company by utilizing SWOT Analysis, it was used for making decisions on an investment project and for understanding strengths, weaknesses, opportunities, and obstacles of internal and external

corporation's environment. This is relevant to the Analysis of the competitive environment Ronnachai Tantrakul (2550) said that SWOT Analysis is a tool used for analyzing the internal and external corporation's environment whether there are advantages or disadvantages by considering the strengths and weaknesses of the corporation's environment and opportunities and obstacles of the external corporation environment. From the SWOT Analysis of the case study company, the company has to take advantage of its strength in formulating marketing strategies and enhancing competitive capability. There are advantages from ingredient price and market growth rate as well. On the other hand, weaknesses, which are internal factors found in the company, are a problem for business operations that the company has consulted and met in the corporation to make sure that the problem can be controlled and solved. For the opportunity analysis which is an external factor, it was found that opportunities will be valuable and able to increase future opportunities for the company to achieve its goal and there is even more market growth. Besides, obstacles which are external factors that are out of control, the company needs to have a plan to deal with them and adjust the business practices according to uncontrollable conditions.

Technical aspects According to the analysis of technical feasibility studies of processed chicken products investment project of the case study company. The results show that there is likely to be a worthwhile investment. The selection of ingredients, production process and production capacity have to be suitable with the quantity and production capability and tools. Machines can be operated at full capacity to reduce



disruptions affecting the production process. The production capacity analyzed that is suitable for the project size is 1,000-1,300 kilograms per day. If there is an efficient production process and suitable production capacity, there will be able to produce products in the required quantity in standard quality. Therefore, technical project analysis requires accuracy because it may affect the accuracy of financial project analysis in calculating project costs and returns.

Finally, the financial aspect According to the analysis of the financial feasibility study of processed chicken products investment project of the case study company, to use the result obtained for investment decision, there is an estimation of the financial budget, income statement, and cash flow statement of the project for the 5 years project implementation using a discount rate of 0.15% and using a total project investment of 8,710,000 baht. The result provides a reasonable return worth on investment. Considering the net present value of 6,832,048.71 baht indicates that the net cash flow from the project under consideration is greater than the initial investment. The internal rate of return of the project is 43.64% where the rate of return is greater than the desired rate of return from the project which is set as 15%. This project only takes 2 years 1 month 11 days to pay back in total investment. This completes the financial indicators criteria as well as the research by Nattika Suttiprasit (2015) And Phatthanan Sudyod (2017) but is different from the other research in chapter 2 due to the methods and the types of business including investment budget effects on different results. Therefore, the producing processed chicken product business is another interesting alternative for deciding on investments for new entrepreneurs.

Because it is a business that can be initiated from a small business to a large business by paying only the average investment amount but receiving a high rate of return and short payback period. The processed food business corresponds with people's lifestyle nowadays which is completely rushed. As a result, processed food has become more popular and meets the needs of consumers. However, researchers would like to make suggestions in this research study. Interested people will be able to study and use it as a guideline for further study.

1. This research study will be beneficial to the case study company and other entrepreneurs who are interested in doing the same or different types of business. They can utilize the knowledge and principles of project analysis as a guideline for applying to suit your business model.

2. Entrepreneurs should study more about marketing strategies to cover all dimensions. For example, there has to be a plan to support purchasing power from consumers who are both existing and new customers to meet their needs. Moreover, there have to be production process and production control standards to ensure quality. Additionally, entrepreneurs have to create product variety to increase the differentiation of the corporation and even find new trade opportunities for corporations to get ready when there is a market expanding to ASEAN trade.

3. For further research study, researchers can utilize the results of this study as a basis for formulating guidelines for the development or extending other categories of processed food products with basic operational characteristics or similar manufacturing processes to promote business operations strength to grow continuously and stably.



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