

CHAPTER 2

LITERATURE REVIEW

Chapter Two will encompass a comprehensive literature review on “market expansion”, specifically related to prior research addressing the previously identified problems. Furthermore, it will present the theoretical framework and relevant concepts, serving as foundational principles and analytical tools for addressing the issues explored within this study.

2.1. Literature Review

Literature review was conducted from searching previous research in the Scopus and Google Scholar using the keyword "market development," which yielded 1,400,000 articles. After filtering for publications from the last 11 years, the search resulted in 159,000 articles, from which 200 articles were chosen for further review, and 15 highly relevant articles were outlined based on their respective contributions to market development aspects.

2.1.1 Research Regarding The Development of Market Aspects by Considering Marketing Strategy Aspects

Prabawa & Fitriani (2020) conducted research on maintaining the existence of traditional herbal medicine through changes in packaging and marketing design. Kusumastuti, et al. (2019) conducted research on onion marketing strategies using the SWOT approach at PT Sayuran Siap Saji.

Prasetyo (2023) conducted research on the analysis of the pecel lumpang mas chili sauce business in Madiun City. Tandoko (2015) conducted research related to business development strategies at PT Grand Prix Indoagung. Suhairi (2022) conducted research related to the analysis of the marketing strategy of PT Mayora Indah's kopiko products in entering and competing in the global market.

2.1.2 Research Regarding The Development of Market aspects by Considering Labor Aspects and Production Capacity

Sudiantini, et al. (2023) conducted research related to PT Indofood's production capacity planning analysis. Tandian & Praptiningsih (2013) conducted research related to the management and development of the tofu production business at the UD family company, the sibling tofu factory in Surabaya. Pratiwi, et al. (2013) conducted research related to increasing the capacity and quality of drying, dyeing,

and developing designs for wooden mask and batik craft products to increase export and domestic markets.

Nursalim, et al. (2019) conducted research related to efforts to increase furniture production in Kupang city MSMEs based on appropriate technology. Oppier (2023) conducted research related to increasing production capacity and marketing strategies for small and medium enterprises (SMEs) for pala fruit syrup in Bool country, Saparua Island.

2.1.3 Research Regarding The Development of Market Aspects by Considering Technological Aspects

Hafidawati, et al. (2023) conducted research regarding assistance in expanding market segmentation using a digital marketing expansion approach for developing large-scale businesses in student entrepreneurship units. Wibowo (2023) conducted research on the influence of marketplaces and social media as marketing strategies on expanding creative industry market segmentation.

Arianto (2020) conducted research related to the development of digital MSMEs during the Covid-19 pandemic. Pratama (2021) conducted research related to strategies for increasing business capacity in MSMEs through digital marketing. Riyoko & Lofian (2020) conducted research related to information technology-based marketing strategy development models in increasing the competitiveness of MSMEs in Jepara.

2.2. Theoretical Background

The theoretical framework will contain various explanations and formulas used in this research. It serves to support the findings and results obtained in this study, which are based on prior research.

2.2.1. Market Expansion

Marketing strategy is a crucial part of a company to continue competing in its business. A good marketing strategy will certainly help the company increase sales by attracting potential consumers to introduce the products offered by the company and compete with competitor products. This is in line with determining the marketing strategy and producing products in accordance with the needs and desires of users. Kotler & Keller (2016).

According to Zeithaml, et al. (2018), marketing strategy is key for market growth, encompassing product diversification, pricing, promotion, and distribution. Effective promotion strategies with discounts, loyalty programs, and advertising will increase the rating and interest of potential consumers.

The Marketing Mix or 4Ps (Product, Price, Place, and Promotion) are crucial factors in marketing, as they provide companies with an effective framework for developing marketing strategies. This approach allows companies to learn about and understand sales performance, the market, and consumer needs for products, according to Kotler & Armstrong (2020).

a. Product Quality

Product refers to the goods and services provided by a company to its targeted market. For example, a Ford Escape consists of spark plugs and thousands of other parts. Ford offers several Escape models and a variety of optional features. Product quality is undoubtedly the most crucial factor in building customer trust and loyalty in using a company's product. This is because, in sales, the primary focus is on product acceptance by the user, customer satisfaction, and the likelihood of repeat purchases of the company's product.

b. Pricing Strategy

Price is the cost customers pay for a product. For instance, Ford sets suggested retail prices for its Escape models, but dealers often negotiate, offering discounts, trade-in allowances, and flexible credit terms. This approach aims to attract price-sensitive buyers and boost sales. Companies using a dynamic pricing strategy, adjusting based on market conditions and customer needs, gain a significant advantage, particularly in international markets.

c. Place

Place (or distribution) involves all company activities that make products accessible to target consumers. For instance, Ford meticulously chooses and supports its dealers. These dealers maintain inventory, conduct demonstrations, finalize sales, and provide after-sales service. In essence, place refers to the marketing or distribution channel, focusing on effective, efficient, and secure delivery so consumers can easily find the company's products in good condition.

d. Promotion

Promotional and communication activities are vital for companies to inform consumers about their products' benefits and value. For instance, Ford invested nearly \$2.5 billion in U.S. advertising last year to promote its brand. They also utilize sales promotions, cash rebates, and low financing rates as purchase incentives. Furthermore, Ford actively engages consumers through its websites and social media platforms like Facebook, Twitter, YouTube, and Instagram. This comprehensive approach is essential to boost demand by increasing consumer awareness of the brand and its offerings through various channels, including advertising, public relations, and sales promotions. Kotler, et al. (2021).

2.2.2. Production capacity

Productive capacity is a conclusion related to the ability, acceptance, or storage of a facility, as the output value of the production system has reached its limit or maximum output value that can be produced. This will stop the amount of demand requested according to the available facilities. According to Heizer & Render (2015), production capacity can be divided into 3 types:

a. Capacity Design

Design Capacity is the maximum theoretical output value of a system in a specific period of time under ideal conditions. Design capacity can also be interpreted as the capacity that a company expects to achieve based on the current available operational picture.

b. Effective Capacity (utilization)

Effective Capacity is the maximum output value at a specific system level. Effective capacity is the capacity that is expected to be achieved by a system in a company with existing operational limitations. Effective capacity is generally lower than design capacity because existing facilities may have been designed for previous product versions. Factors affecting the formation of effective capacity are product design, quality of materials used, human resources, maintenance of machines and facilities, and job design.

c. Efficiency Capacity

Efficiency Capacity is a presentation of the design capacity that has been achieved, depending on how the facility is used and managed. Efficiency capacity measures how well the facility or machine is used in the production process.

If there is a demand for products that exceeds capacity, the company will limit the amount of demand by scheduling and waiting for a long enough time, then increasing the product price or reducing the profit obtained. However, if the production facility does not support reducing revenue, then the long-term way is to increase the production capacity.

If there is a condition where capacity exceeds demand, the company will conduct intensive marketing activities or lower prices with product market share accommodation. But when demand decreases, the production capacity or the amount of products produced will be controlled by adjusting to the amount of demand.

2.2.3. Wood Drying (Kiln–Drying)

An oven is a heating or drying device, as a substitute for sunlight, which is used to dry an object. The working system of this drying oven machine is to dry objects at the required temperature. By using hot air flow with the help of an exhaust blower, moist air will be sucked in and flowed out as hot air enters which will dry the object. This drying system, with a drying machine is called drying with artificial heating. According to Budianto (1996), the wood drying process is greatly influenced by:

1. Wood factors, including the type of wood and the structure of the wood pores, the thickness of the wood to be processed, the initial moisture content of the wood (before drying) and the final moisture content (after drying) .
2. Wood stacking factors, including the height of the wood holder and the way the wood is arranged in the oven chamber to maintain air circulation in the oven chamber as a whole.
3. Oven space factors include air circulation in the room, heat energy supplied, and regulation of relative humidity in the room to absorb water vapor from the wood.

These factors affect the wood and adjust the conditions inside the wood to the conditions of the surrounding air, in accordance with the natural properties of wood, namely hygroscopic (absorbs water molecules). If the conditions around the wood are too different from the conditions inside the wood, tension will occur in the wood (drying stresses). Stresses in wood arise due to the uneven release of water content in the wood. If this stress cannot be overcome by expanding and shrinking the wood cells, the wood cell structure will be torn and the wood will crack or split According (Budianto, 1996; Lensufie, 2008) Mentioned by Rolly R. Oroh (2018).

The natural drying system is the oldest wood drying system in Indonesia, because in Indonesia solar energy is very easy to obtain. Tree trunks that have been cut have a water content of up to 200% so they must be dried for a long time (3 months to 3 years) to reach a water content in the wood that can and is good for carpentry. This natural drying system is very dependent on the season and sunlight. (Listyanto, 2016; Budianto, 1996).

Several factors to consider in natural drying systems (Budianto, 1996; Awaludin & Irawati, 2017; Wardi & Soewarsono, 2000).:

1. Wood drying requires extensive land use, driving up investment costs. Therefore, the investment value, interest, and drying process duration must also be carefully considered.
2. The drying time for wood is quite long so the stock of material to be dried must also be in large quantities.
3. Wood that is dried in the sun can crack. cracking or warping due to heat from the sun and uneven drying of the wood.
4. Drying time will only be effective during the dry season and will depend greatly on the weather.
5. The water content in wood (Moisture Content) generally only reaches around 15% and is still relatively high.

Wood drying process is divided into 5 process stages, namely:

1. stages of initial wood heating (preheating).
2. Drying the wood to the fiber saturation point.
3. Drying down from fiber saturation point (FSP) to Final Moisture Content (FMC)
4. Final drying to maximum dry wood point
5. Cooling down and discharge of timber stack.

The main aim of the wood-drying process is to enhance the quality and strength of the wood, making the subsequent work process easier. The risk of damage will always be higher than the percentage of good results if the industry cannot control the wood-drying machine. Damage and defects in wood must be prevented and addressed before moving on to the next process. Processing high-value wood requires strict management throughout the entire process, including drying. Errors can be fatal. Drying cannot simply be accelerated by raising the drying room temperature, as this will compromise wood quality due to excessively fast drying.

(Budianto, 1996). Defects and damage to wood do not always occur as a result of drying errors, they can also come from:

- a) when growing (natural);
- b) incorrect logging and handling of logs
- c) sawmill process.

2.2.4. Engineering Economy

At its core, engineering economics involves systematically assessing the economic merit of a proposed solution to an engineering problem. For an engineering solution to be deemed acceptable (meaning, affordable), it needs to show a clear positive balance of long-term benefits over long-term costs. Furthermore, it must also be capable of

- a. To foster the sustained viability and prosperity of an organization.
- b. Represents new, imaginative, and groundbreaking technologies and concepts
- c. Allow for clear recognition and close examination of the predicted results
- d. To assess financial profitability or success using a clear, dependable, and universally accepted metric.

When facing a decision, you must choose from multiple alternatives. Defining these options clearly is crucial as they directly impact the final decision's quality. Engineers and managers should prioritize this, using creativity and innovation to develop alternatives. One common option is the "do-nothing" approach, which means maintaining current operations. If feasible, always include this in your analysis, but don't let it prevent innovative change. Sullivan, et al. (2019).

An engineering economy study includes several key elements: problem identification, defining objectives, estimating cash flows, financial analysis, and decision-making. Employing a structured procedure is the most effective way to choose the optimal solution. The steps in an engineering economy study are:

- a. Identify and understand the problem.
- b. Collect available and relevant data and define solution alternatives.
- c. Make a realistic cash flow projection.
- d. Determine a specific standard that will be used for decision-making
- e. Evaluate each alternative considering non-economic factors.
- f. Select the best alternative solutions.
- g. Implement the solution and monitor the results.

While not part of the economic study, the final step is crucial to meeting project goals. The most economical option may be limited by capital constraints or non-economic considerations.

Therefore, steps five and six might lead to choosing an alternative that isn't the most economically favorable. Additionally, sometimes more than one project can be selected and implemented, especially when the projects are independent of each other. In such cases, steps five through seven will differ from the standard procedure mentioned previously. Blank & Tarquin. (2022).

2.2.5. Present Value (PV)

Present value is a calculation of the current worth of a sum of money to be received or paid in the future, based on the amount of funds expended today. According to Joel G. Siegel and Jae K. Shim (as cited in Putri et al., 2013), present value refers to the current value of a future amount of money. Fundamentally, the calculation of present value involves the concept of discounting. The present value concept represents the current value of projected future net cash inflows or income. These future net cash flows are projections of returns generated from an investment. Present value is also referred to as a “discounted value.” The discount rate (or capitalization rate) is the interest rate used to convert future values into present values. The calculation of Present Value (PV) uses the following formula:

$$PV = \frac{1-(1+i)^{-n}}{r} A \quad (2.1)$$

Description :

PV: Present Value (the current value)

I: Interest (the interest rate per period)

N: Number of periods

A: Annuity (the amount of income received per period)

The concept of annuity refers to a calculation involving a series of equal payments received at regular intervals or periods. The amount of each payment depends on factors such as the loan amount, the duration (term), and the interest rate. According to Ciaran Walsh, an annuity is defined as a series of equal payments made at consistent time intervals. Examples of annuities include deposit interest payments, bond interest, and installment payments for goods such as motorcycles, cars, houses, and others.

2.2.6. Net Present Value (NPV)

Net Present Value (NPV) is a widely utilized method for assessing a project's profitability relative to its initial investment. It serves as a key investment criterion to determine a project's feasibility. The NPV method involves discounting all future cash flows to their present value using a predetermined required rate of return (Ekowati et al., 2016).

Fundamentally, NPV represents the difference between the present value of benefits and the present value of costs. More specifically, it can be defined as the current value of all anticipated future benefits or revenues generated by a project or investment, which are then discounted back to their equivalent value at the present time. These calculations are performed using the following standard formulas:

$$NPV = \sum_t^n 1 \frac{CF_t}{(1+r)^t} CF_t \quad (2.2)$$

Description:

CF_t = Net Cash Flow During Period t

r = Discount Rate (or required rate of return)

t = Time Period

n = Total number of time periods

From the results of the NPV calculation, it can be concluded that:

- a. If the NPV value > 0 , the project can be declared feasible to implement.
- b. If the NPV value $= 0$, the project can return exactly the value of its investment.
- c. If the NPV value < 0 , the project cannot generate the value of the investment.

If the NPV calculation result is greater than zero, the business or project is considered feasible to implement. Conversely, if the result is less than zero, the business is deemed not feasible. If the Present Value (PV) has already been calculated, then the NPV can also be determined using the following formula:

$$NPV = PV_{cf} - PV_{of} \quad (2.3)$$

Description :

PV_{cf} = Total Present Value (PV)

Pv_{of} = Investment Cost

This calculation is performed by subtracting the initial investment from the total income generated by the investment to determine the total value obtained from the

investment, or Net Present Value (NPV) is the difference between the present value of future net cash flows and the present value of the initial investment at a specific interest rate. Karim A. I., (2014).

2.2.7. Internal Rate of Return (IRR)

The Internal Rate of Return (IRR) is the discount rate where a project's Net Present Value (NPV) is zero. It essentially shows the rate of return on invested capital, equating the present value of cash outflows with inflows. If the calculated IRR is greater than the Social Opportunity Cost of Capital (SOCC), the project is feasible. If it equals the SOCC, it's at break-even. If the IRR is less than the SOCC, the project is unprofitable or not feasible. (Ekowati et al., 2016).

The Internal Rate of Return (IRR) can be determined through a more straightforward trial-and-error method. This approach, often formalized using linear interpolation, employs the following formula:

1. Select a specific discount rate that approximates the estimated IRR and calculate the resulting NPV. This chosen rate should yield a positive NPV that is still close to zero.
2. Select a specific discount rate that approximates the estimated IRR and calculate the resulting NPV. This chosen rate should yield a negative NPV that is still close to zero.
3. The IRR can be approximated using either interpolation or extrapolation, where a new discount rate is calculated based on two previously identified rates, commonly denoted as i_1 and i_2 .

Based on trials, the Internal Rate of Return (IRR) is the point where the Net Present Value (NPV) equals zero, falling between a positive and negative NPV. The IRR formula is:

$$IRR = i_1 + \frac{NPV_1}{(NPV_1 - NPV_2)} (i_2 - i_1) \quad (2.4)$$

Description:

IRR = Internal Rate of Return

NPV1 = NPV calculated using the lower discount rate (i_1)

NPV2 = NPV calculated using the higher discount rate (i_2)

i_1 = DF which results in NPV1

i_2 = DF which results in NPV 2

2.2.8. Sensitivity Analysis

Sensitivity analysis is used to project what will happen to a project's profitability if the estimated data values of the study factors are changed. It is meant to determine if a project is still acceptable or feasible to implement, for example, should annual expenses turn out to be 10% higher than previous estimates. Sometimes, sensitivity is specifically defined as the percentage change in one or more factors that can alter a previously determined decision among project alternatives or reverse a decision regarding the economic feasibility of a single project.

This percentage change in data is called sensitivity with respect to decision reversal. Another useful sensitivity tool is the spiderplot. This approach explicitly shows the impact of variability in the estimation of each factor of concern on the measure of economic feasibility. Sullivan, et al. (2019).

Since the parameter values in engineering economics studies are typically estimated or assumed, they are inherently subject to a margin of error. This means that these parameter values can be either higher or lower than the results obtained, or they can fluctuate at various times. Such changes in parameter values will, of course, also lead to a corresponding change in the output level or the outcome of a given investment alternative.

A change in the output level or results may also cause a decision to shift from one alternative to another. If changes in the aforementioned factors or parameters result in a change in a decision, that decision is said to be sensitive to the changes in the values of those parameters or factors. To determine how sensitive a decision is to the changes in the parameters that influence it, every decision in engineering economics should be accompanied by a sensitivity analysis.

This sensitivity analysis can provide an indication of how robust a decision is in the face of changing values of influencing factors or parameters. Sensitivity analysis is performed by changing the value of a single parameter at a time to observe its effect on the acceptability of an investment alternative. The parameters that typically change and whose changes can influence decisions in engineering economics studies include investment value, cash flow, salvage value, interest rate, tax rate, and so forth. Sufa M. F., (2007).