Journal of Agri-Food Science and Technolgy
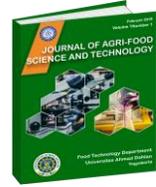
The Analysis of Business Feasibility of Bottled Water Product In Cup Of 240 mℓ In PDAM Tirta Binangun, Kabupaten Kulon Progo

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ARTICLE INFO	ABSTRACT

Regional Drinking Water Company (PDAM) Tirta Binangun is one of the Regional Owned Enterprises (BUMD) in the field of water delivery services for Kulon Progo residents. PDAM Tirta Binangun also has a Bottled Drinking Water (AMDK) production program. AMDK KU needs to identify the financial feasibility of a 240 mℓ cup product. The need for business analysis is to find out whether AMDK KU can generate profits in the future or vice versa. The analysis of business feasibility used the methods of Break Event Point (BEP), Net Present Value (NPV), and Net B/C Ratio. Besides, it is necessary to take alternative corrective actions at the company for 240 mℓ cup products. The company of AMDK KU has gotten the normal BEP for the first cup production of 240 mℓ is 70,654 cartons, and the income in 6 months and 15 days is Rp 1,130,470,076. The analysis result is the company of AMDK KU, with the cup production of 240 mℓ, can be said that it had a profit. If the income and the price are increased by 10 percent, 20 percent, and 30 percent, it still will have profit. According to the NPV analysis, the products of 240 mℓ cup of AMDK KU are feasible to be done, even for 10 days later. However, the analysis result of the Net B/C Ratio, the products of 240 mℓ cup of AMDK KU is profitable because the score is Rp 1.1332. Furthermore, the PP result found in 10 months 11 days is included as a quick return on investment. The alternative action to solve the unprofitable products is by developing the product using the new innovation, product branding, a new marketing strategy, and additional investment.

1. INTRODUCTION

According to Hardinsyah in Wiyanti (2019), water is the main component in the human body because living beings cannot grow and develop without it as water is the most important thing in the whole body, including blood and digestive enzymes. Drinking water is the main component of the body; the average water that everyone has around 70-80% of its body weight. All the systems in the body rely on water. The presence of bottled water product (AMDK) is the solution from what the citizen needs. Besides fulfilling the needs of proper clean water, the citizens' awareness about a healthy lifestyle and practical use become supporting points of the increasing growth of bottled water production in Indonesia. The General Chairman of Indonesia Businessman Association of Bottled Water Production (ASPADIN) Hendro Baroena in Wiyanti (2019), the consumption of AMDK from Java Island, reached 40% while 60% came from outside Java Island.

Regional Drinking Water Company (PDAM) Tirta Binangun is one of the Regional Owned Enterprises (BUMD) in the field of water delivery services for Kulon Progo residents, include residents' houses and water tank service. Besides, PDAM Tirta Binangun also had a program to produce AMDK. It was suggested in 2011 by the Director of PDAM Tirta Binangun. Mr. Hasto, the Regent of Kulon Progo, wanted to have the innovation of products from Kulon Progo itself. The background of this idea came from the activity named *Bela Beli Kulon Progo*. This program was a campaign to buy local products owned by Kulon Progo. Mr. Hasto asked the Director of PDAM, Mr. Jumantoro, S.E, to find product innovation or business development in six months. In the end, he came got the idea to produce bottled water products by utilizing the water resource in Kulon Progo. It was expected to be able to develop the current business in PDAM.

The analysis of business feasibility in AMDK KU PDAM Tirta Binangun Kulon Progo is useful to find out whether the business of AMDK KU is worthy or not. The product of AMDK KU PDAM Tirta Binangun Kulon Progo started in 2012; it worked effectively in 2013. As a result, it has been working for seven years (Meiritanto, 2019). The company has not analyzed business feasibility. Thus, it has not known whether the company had profit or loss. This research is needed to find out whether AMDK KU can generate profit in the future or vice versa. Besides, the company also can evaluate the expenses in the production of AMDK KU.

The analysis of business feasibility done in AMDK KU used the methods of BEP, NPV, Net B/C Ratio, and Payback Period (PP). The aspects which will be measured are BEP, NPV, Net B/C Ratio, and PP from the product of AMDK KU cup 240 ml in 2018.

The analysis of business feasibility aims to identify the business feasibility in the company of AMDK KU of cup product of 240 mℓ financially according to the data of BEP, NPV, *Net* B/C *Ratio,* and PP.

2. RESEARCH METHOD AND MATERIALS

This research is done in PDAM Tirta Binangun Kulon Progo. It is located in Jalan Masjid Agung No 1, Wates, Wates, Kulon Progo. The research period started from December 2nd to December 14th, 2019.
a. *Primary Data* is the primary data which found directly from the researcher or informant. They can be collected from the interview process related to investment data from PDAM Tirta Binangun Kulon Progo. This research used the cup product of 240 mℓ to be analyzed. It was

chosen because it was the best selling product in the market. The data used to decide the fixed cost and variable cost was the financial data in 2018.

b. ***Secondary Data*** is the data found from other parties, not the researcher. The secondary data included financial data every year and investment data from PDAM Tirta Binangun.

c. ***Break-Even Point*** (BEP) is a condition where the total income is as much as the total of expenses when the company gained neither profit nor loss. Besides, if the sales in BEP connected with the planned sales, the information about how far the company can have decreased sales numbers without being afraid to have loss would be found (Buata, 2015).

The total products that have been produced by AMDK KU were 130,759 cartons with Rp 16,000/carton. According to Trisnantoro (2018), the formula of total cost and total revenue is:

$$\text{Total Cost} = \textit{Fixed cost + variable cost}$$
$$\text{Total Revenue} = \text{price x total products}$$

The calculation of the percentage of the variable cost (VC) and margin income (MI) as below:

$$\% \text{ VC} = \frac{\text{VC}}{\text{TR}} \text{ x } 100\%$$

$$\text{MI} = \text{TR} - \text{VC}$$

The formula of BEP Volume, BEP time and BEP rupiah as below:

$$\text{BEP Volume} = \frac{\text{FC}}{\text{P}-\left(\frac{\text{VC}}{\text{Amount of production}}\right)}$$

$$\text{BEP Time} = \frac{\text{MI}}{\text{amount of product}}$$

$$\text{BEP Rupiah} = \frac{\text{FC}}{\%\text{MI}}$$

In this research, it also counted the expenses increased as 10 percent, 20 percent, and 30 percent, and the income increased 10 percent, 20 percent, and 30 percent as below:

$$\text{TR X\%} = \text{TR} + \%\text{TR}$$
$$\text{The product price X \%} = \text{Product Price} + \%\text{product price}$$

According to Kusuma (2014), ***Net-Present Value*** (NPV) is conducted to find out how investment rates are compared to the change in currency value. NPV used initial purchase price and the time value of money to count the assets' value. As it is said, it can be concluded that NPV is the current value subtracted to the initial purchase price. The calculation of *Present Value* (PV) based on the formula as below:

$$\text{as } n = 0$$
$$\text{as } n = 1 - 10$$
$$\text{R} = 7\% \text{ (\textit{revenue atau discount range})}$$
$$\text{PV(0-10)} = \text{F x } \frac{1}{(1+r)^{0-10}}$$

Hasibuan (2008) said that ***Net B/C Ratio*** stated that *Net* B/C *Ratio* is the ratio of the total positive current value and the total negative current value. *Net* B/C *Ratio* showed the description of how many times the benefit is acquired from the cost given.

According to Febrianto (2017), the feasibility of a business is calculated using the analysis of *Revenue Cost Ratio* (R/C). The comparison of R/C (ratio) between income (TR) and expenses (TC) used the formulas as seen below:

$$R/C = \frac{TR}{TC}$$

According to Salam (2006), the criteria that usually used to measure a business are:
a. B/C *Ratio* > 1: The business can be conducted (profitable).
b. B/C *Ratio* = 1: The business can return the modal as much as the implemented expenses (break-even).
c. B/C *Ratio* < 1: The business is unsuccessful because it is not profitable.

Darusman (2020) stated that the ***Payback period*** is a method to find out the period which used to return the investment by using profit as the comparison. The formula of the *payback period* is written below:

$$Payback\ Period = \frac{Investment}{Cash\ inflows} \times 1\ year$$

Criteria:
a. The value of *Payback Period* less than three years of the modal return is categorized as fast payback.
b. The value of payback period about 3 to 5 years is categorized as medium payback.
c. The value of a payback period of more than five years is categorized as slow payback.

RESULTS AND DISCUSSION

The fixed cost found in the company is employee expenses and investment expenses in 2018 as Rp 335,145,466. The production revenue (total revenue) which used to analyze BEP using data of theoretical calculation based on the multiplication of the production of *cup* 240 mℓ and the current price (Rp 16,000) is called the production revenue in 2018 as Rp 2,092,144,000. The data for BEP analysis also used the investment data used in 2018.

On the other side, production revenue for NPV analysis, *Net* B/C *Ratio,* and *the payback period* are the real production data in 2018 as Rp 2,047,771,000 (the product price experienced the different price). Investment data for the analysis of NPV, *Net* B/C *Ratio,* and *the payback period* is the total investment from the starting point until current.

The variable cost of the company of AMDK KU is the operational expenses in 2018 as Rp 1,471,895,317. ***The total cost*** is Rp 1,807,040,783, and the result of total revenue (production income by BEP analysis) is Rp 2.092.144.000. It was from the financial data in AMDK KU in 2018. ***Margin income* (MI)** from the data calculation is Rp 620.248.683; the result was from the profit made by the company for producing *cup* 240 mℓ. BEP values were described below:
a. ***BEP volume*** was from the calculation is 70,654 cartons. It showed that the sales reached the break-even point.

b. ***BEP time*** *was* from the calculation is 0.5403 years or six months and fifteen days. It showed that the sales would reach the break-even point for six months and fifteen days.
c. ***BEP rupiah*** was from the calculation is Rp 1,130,470,076. It showed that the sales would reach the break-even point when they had Rp 1,130,470,076 as of the sales income.
d. ***BEP 10 percent increase*** had the result of BEP volume as 52,833, and BEP time is 0.4041 or 4 months 24 days. Besides, it showed the BEP rupiah is Rp 929,866,379.
e. ***BEP 20 percent increase*** had the result of BEP volume as 42,191, and BEP time is 0.3227 or 3 months 26 days. Besides, it showed the BEP rupiah is Rp 810,075,413.
f. ***BEP 30 percent increase*** had the result of BEP volume as 35,118 and BEP time 0.2686 or two months eight days. Furthermore, the calculation of BEP rupiah is Rp 730,451,380.

The calculation of NPV in the company of AMDK KU found NPV period 0 - Rp 1,543,387,450, NPV period 1 Rp 1,672,486,866, NPV period 2 Rp 1,563,071,838, NPV period 3 Rp 1,460,814,802, NPV period 4 Rp 1,365,247,478, NPV period 5 Rp 1,275,932,223, NPV period 6 Rp 1,192,460,021, NPV period 7 Rp 1.114,448,618, NPV period 8 Rp 1,114,448,618, NPV period 9 Rp 973,402,583, NPV period 10 Rp 909,722,041. It showed the company had a PV score of more than 0 from the first period to the tenth period; it meant the investment in this company is feasible to apply until ten years.

The analysis of the Net B/C Ratio showed the value of 1.1332. If the company spent Rp 100, it would receive Rp 113.32. According to the analysis calculation of *the Net* B/C *Ratio* in AMDK KU, the cup product of 240 mℓ showed the score as 1,1332; it meant the business could be done or profitable. The statement is suitable for Salam (2006); it was in the criteria of profitable business so that it should be kept or fixed to add the profit.

The analysis of the Payback Period was 0.8624 year or ten months and eleven days. It meant the return of investment modal in the company could be reached for ten months and eleven days. In conclusion, the Payback Period was less than three years. Moreover, it could classify as a fast return of modal investment.

CONCLUSION

The company of AMDK KU found the calculation score of BEP or standard break-even point for cup product of 240 mℓ which were the first was BEP volume as 70.654 cartons; it is for six months and fifteen days with BEP rupiah is Rp 1,130,470,076. Although the income and the price expected to increase as 10 percent, 20 percent, and 30 percent, the company was still able to reach the break-even point. According to the analysis of NPV, the product was feasible to be sold, even for the next ten years.

The *Net* B/C *Ratio* analysis showed the value of 1.1332. The *Net* B/C *Ratio* showed that the production could continue as it was profitable. Furthermore, the result of the payback period analysis was ten months and eleven days that meant it had a fast return level, less than three years.

According to the analysis of business feasibility results, using the methods of BEP, NPV, *Net* B/C *Ratio,* and PP, the company of AMDK KU got the surplus. It can be categorized as a company that can be continued and profitable.

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