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BUSINESS ANALYSIS OF HOUSEHOLD SCALE COW'S MILK INDUSTRY IN SARANGAN VILLAGE MAGETAN REGENCY

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ABSTRACT

The purposes of this research were to determine the total costs, revenues, profits, efficiency, and risks in the household scale pasteurized cow's milk industry in Sarangan Village, Magetan Regency. The basic method used is descriptive analysis. Determination of the research location purposively with nine respondents, were taken by the census method. Data collection techniques were collected through interviews, observation, recording, documentation, and questionnaires. The data analysis used is costs, revenues, profits, business efficiency, and risk. The results showed that the business has average total cost production in December 2021 of IDR 9.805.292,00/month. The average revenue is IDR 14.729.444,00/month. So that the average profit is IDR 4.924.152,00/month. The business is already efficient because the efficiency value is 1,54. Therefore, the coefficient of variation is 0,53, and the lower profit limit is minus IDR 253.175,00. These values mean that the business is at risk of experiencing a loss of IDR 253,175.00.

Keywords: Business Analysis, Efficiency Analysis, Risk Analysis, Cow's Milk, Household Scale Industry.

INTRODUCTION

The agricultural sector is one of the new sources of growth, one of the subsectors in the agricultural, forestry, and fishery sector is animal husbandry. Animal husbandry is a subsector that the people of Indonesia widely carry out because it has a vital role in meeting the community's needs. According to Livestock and Animal Health Statistics (2019) Based on the type of farm can be grouped into several types, one of which is large livestock. In 2019, the number of large livestock in Indonesia was 19,214,000 heads. In addition, various types of farms have many benefits that can be taken, such as meat, eggs, and milk as protein or can be taken as industrial raw materials or shoes.

One type of business in the animal husbandry subsector that has excellent prospects and provides large profits for the owner is dairy cows, which can be taken its fresh milk. This prospect is due to the production of non-seasonal dairy cows (Mandaka & Hutagaol, 2016).

Based on data from the Central Bureau of Statistics (2020), East Java Province is the province that has the largest dairy cow population in Indonesia during the 2016-2020 time period. According to Rizaty (2021), East Java Province is considered a strategic area for breeding dairy cows because this area is an area above sea level that meets the main prerequisites for breeding dairy cows. Magetan Regency is one of the East Java regions with a dairy cow population. The dairy cow population in Magetan Regency can be seen in Table 1.

Table 1. Data on Dairy Cows Population in Magetan Regency in 2020 (Tail)

District	Total Dairy Cows Population in Magetan Regency				
	2016	2017	2018	2019	2020
Plaosan	129	151	161	287	308
Panekan	48	77	92	135	212
Sukomoro	37	38	41	17	13
Sidorejo	15	14	19	70	133
Karas	7	11	11	16	44
Poncol	-	-	-	-	21
Total	236	291	324	525	731

Source: Central Bureau of Statistics (2021)

Based on Table 1, it is known that Plaosan District is a district with the largest number of dairy cows population in the Magetan Regency. In 2020 Plaosan District had a dairy cattle population of 308 heads, of which 42.1% of the total dairy cattle population in Magetan Regency was in Plaosan District. Therefore, a large number of dairy cows in the Plaosan District has the potential to produce fresh cow's milk. According to Mahdiah (2020), fresh milk has characteristics that are not durable and easily damaged, so suitable processing is needed in the post-harvest. One processing that can be used in fresh milk is heating or pasteurization, which can be done on a household scale. The pasteurization of fresh milk can produce milk with various flavours. Pasteurization of milk is the process of heating milk below the boiling point. The existence of this process can eliminate putrefactive bacteria and pathogens in milk (Umar *et al*, 2014)

Plaosan District has a centre for processing pasteurized cow's milk on a household scale located in Sarangan Village. This pasteurized cow milk processing centre is a cow's milk tourism area in Magetan Regency, where consumers can buy pasteurized cow's milk products at production houses. Sarangan Village has 9 household-scale pasteurized cow's milk producers who just started their business about 3 years ago. Before the pasteurized cow's milk business was developed, cow's milk production from Sarangan Village was directly sold to Nestle and Indolakto. The development of Sarangan Village as a pasteurization cow's milk processing centre is an intervention from the Livestock and Fisheries Service of Magetan Regency.

The existence of the Milk Processing Industry (MPI) can accommodate, manage, and market fresh cow's milk from dairy cow farmers to be used as pasteurized cow's milk, considering that fresh milk products are very vulnerable to damage. The pasteurized cow's milk processing industry utilizes fresh milk from dairy cow farmers in Sarangan Village as raw material, which is then processed into pasteurized cow's milk with various flavours such as melon, strawberry, chocolate, taro, and wine. Not only that, but the existence of a household-scale pasteurized cow's milk processing industry in the nest village of Magetan Regency is also beneficial for the surrounding community by creating new jobs. Besides that, it can also add to the selling value of cow's milk.

The business of the household-scale pasteurization cow's milk industry in Sarangan Village, Magetan Regency, was initiated three years ago. During the past three years, household-scale pasteurized cow's milk producers have overgrown with the increasing number of household-scale pasteurized cow's milk producers in Sarangan Village, Magetan Regency. However, there are some problems that should be faced by household-scale pasteurized cow's milk producers in Sarangan Village, such as the absence of administrative bookkeeping, the fluctuating prices of the ingredients used, the stock of pasteurized cow's milk that is not sold out, the sterility in the production process, the licensing of pasteurized milk, and its marketing is less widespread. The problems will impact the costs, revenue and profits obtained by the pasteurized cow's milk industry, and pose business risks. Therefore, research on the business analysis of the household-scale cow's milk industry in Sarangan Village, Magetan Regency, needs to be carried out to determine the large profit potential of the business. This study uses methods that can analyze the condition of the business, such as the costs, revenue, profit, efficiency, and risks of a household-scale pasteurization cow's milk industry.

METHOD

The research method used in this study is a descriptive method with a survey method. Ashari *et al*. (2017) state that descriptive analysis is one of the methods in research that explains the characteristics of an object under study. According to Kurniadi & Islami (2019), a survey is a research method using questionnaires as an instrument for collecting data.

This research was conducted in Sarangan Village, Magetan Regency, in December 2021, where the determination was carried out by *purposive* or intentional method. According to Endraswara (2006), the *Purposive* method is a sampling that is carried out deliberately because there is a reason and specific considerations and has been adjusted so that it can follow the purpose or objectives of the study. Plaosan District was chosen because it has the highest dairy cow population in Magetan Regency.

The sample census method determined the number of samples used was 9 pasteurized cow's milk producers in Sarangan Village, Magetan Regency. According to Arda (2017), the sample census method or saturated sampling is a sample determination technique in which all members of the population are used as a sample or, in other words, a sample used as a whole or a population.

The primary data in this study were obtained from direct interviews with household-scale pasteurized cow's milk producers in Sarangan Village, Magetan Regency, the head of Sarangan village, and kamituwo Singolangu Environment using a list of questions that had been prepared. Secondary data is obtained from government agencies or institutions related to research, namely the Central Statistics Bureau, the Directorate General of Animal Husbandry,

Sarangan Village, the Magetan Regency Industry and Trade Office, and the Magetan Regency Cooperatives and Micro Enterprises Office, and the Magetan Regency Livestock and Fisheries Service.

This study's data collection used observation techniques, interviews, recording, documentation, and questionnaires. The data analysis methods used in this study are business analysis, business efficiency analysis, and business risk analysis. The analysis method has also been used by Hari S & Affandi (2014), Syafar & Lamusa (2015); Waseso (2017); Habaora *et al*. (2019); and Hayati (2019).

Business analysis is used to determine the number of costs incurred, revenue, and profit obtained from the household-scale pasteurization cow's milk industry in Sarangan Village, Magetan Regency.

The formula can know the cost:

$$TC = TFC + TVC$$

Where:

TC = The total cost of the household-scale pasteurization cow milk industry (Rp/month)

TFC = Total fixed costs of household-scale pasteurization cow's milk industry (Rp/ month)

TVC = Total variable costs of household-scale household-scale pasteurization cow's milk industry (Rp/ month)

Revenue can be calculated using the formula:

$$TR = P\ x\ Q$$

Where:

TR = Total revenues of the household-scale household-scale pasteurization cow's milk industry (Rp/month)

P = The price of household-scale pasteurization cow's milk industry (Rp)

Q = The amount of output of household-scale pasteurized milk production (bottle)

The formula can obtain profit:

$$\pi = TR - TC$$

Where:

π : Profit of household-scale pasteurization cow's milk industry (Rp/month).

TR : Total revenue of household-scale pasteurization cow's milk industry (Rp/month).

TC : The total cost of household-scale pasteurization cow's milk industry (Rp/month).

Business efficiency is calculated by the *R/C* ratio or Revenue Cost Ratio. Systematically formulated as follows:

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

Where:

TR = Total revenue of household-scale pasteurization cow's milk industry (Rp/month)

TC = The total cost of household-scale pasteurization cow's milk industry (Rp/month)

According to Rahayu (2011), the criteria used in the assessment of business efficiency are:

R/C > 1 means the business is said to be worth running.

R/C < 1 means that the business is considered unworthy of running.

R/C = 1 means that the business has not been efficient or reached a break-even point.

The risks faced by household-scale pasteurized cow's milk producers in Sarangan Village, Magetan Regency, can be calculated using the coefficient of variation and the lower profit limit. Systematically formulated as follows:

Business risks can be known using the calculation of the coefficient of variation and the lower limit of profit. Systematically formulated as follows:

$$\text{CV} = \frac{V}{E}$$

Where:

CV = Coefficient of variation of pasteurized cow's milk industry.

V = Deviation of pasteurized cow's milk industry (Rp)

E = The average profitability of the pasteurized cow's milk industry (Rp)

Before calculating the coefficient of variation, should seek the average profit from cow's milk industry undertakings that can be systematically formulated as follows:

$$E = \sum_{i-1}^{n} \frac{Ei}{n}$$

Where:

Ei = Profits obtained from the pasteurized cow's milk industry (Rp/monht)

n = number of periods of study

After obtaining the average profit, it is then calculated the standard deviation using the method of variation or variety analysts, namely:

$$V = \sqrt{V^2}$$

As for the calculation of the various analysis, it is formulated as follows:

$$V^2 = \frac{\sum_{i=1}^{N}(E_i - E)^2}{N - 1}$$

Where:

V^2 = variety

N = number of pasteurized cow's milk industry (people)

E = average profit from pasteurized cow's milk industry (Rp)

Ei = Profit obtained from pasteurized cow milk industry business (Rp/month)

The formula of the lower limit of profit (L), i.e.:

$$L = E - 2V$$

Where:

L = Lower limit of profit

E = Average profit from pasteurized cow's milk industry (Rp)

V = Standard deviation from pasteurized cow's milk industry (Rp)

The criteria for the relationship between risk and profit if the CV value ≤ 0.5 or L ≥ 0 states that producers who work on pasteurized cow's milk will always avoid losses. On the other hand, if the CV value > 0.5 or L < 0, there is a chance of losing that will be experienced by producers who work on pasteurized cow's milk (Tobing et al., 2021).

RESULTS AND DISCUSSION

Sarangan Village is the center of the household-scale pasteurized cow milk industry. These industry players are mostly women or housewives. This industry reduces unemployment and increases fresh milk's selling value in Sarangan Village, Magetan Regency. Pasteurized cow's milk industry in Sarangan Village is on a household scale in the form of a tourist village. Pasteurized cow's milk can be purchased in production houses or at resellers. The price of pasteurized cow's milk is IDR 7,000.00 / bottle (250 ml). The production of pasteurized cow's milk is every day.

The identity of the respondents is an illustration of the background of the business owner of the household-scale pasteurized cow's milk industry in Sarangan Village, Magetan Regency. The identity of the respondents of the household-scale pasteurized cow's milk industry in Sarangan Village, Magetan Regency, is fully presented in Table 2.

Table 2. Identity of Respondents

No	Identity of Respondents	Information
1	Number of samples (people)	9
2	Average Age (years)	40
3	Average Education (years)	13
4	Average number of family member (people)	5
5	Average Number of active family members (Person)	2
6	Average length of work (years)	3

Source: Primary Data Analysis 2022

Based on Table 2, it can be known the identity of the respondents of the household-scale pasteurized cow's milk industry in Sarangan Village, Magetan Regency. Pasteurized cow's milk producers have an average age of 40 years and an average education of undergraduates. According to Ukkas (2017), this age is a productive age with strong physical abilities, advanced thinking, ease of understanding, and new technology to manage a household-scale pasteurized cow's milk industry. The education level will also affect producers' readiness to receive and absorb new technologies, information, and innovations, so their productivity is much higher (Yuniarsih *et al*, 2020).

The average number of members of the household-scale pasteurized cow's milk industry family is five. At the same time, the average family member active in the household-scale pasteurized cow's milk industry is two. The family members involved were mainly wives, first children, and grandmothers. The household-scale pasteurized cow's milk industry, stands for an average of 3 years. This household-scale pasteurized cow's milk industry is run as a side job to provide additional income.

In 2021-2022, four pasteurized cow's milk industry producers must go through crowded conditions, normal conditions, quiet conditions, and pandemic conditions. The amount of pasteurized cow's milk produced by household-scale pasteurized cow's milk producers in Sarangan Village, Magetan Regency, can be seen in Figure 1.

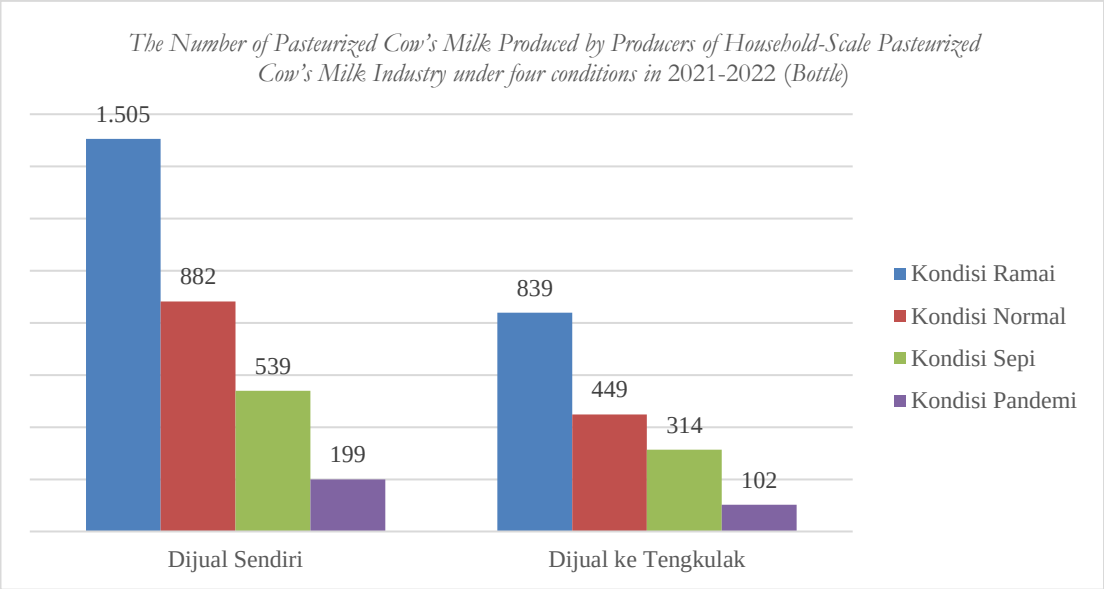

Figure 1. The Number of Pasteurized Cow's Milk Produced by Producers of Household-Scale Pasteurized Cow's Milk Industry under four conditions in 2021-2022 (Bottle)

Source: Primary Data Analysis 2022

Based on Figure 1, it can be seen that the highest amount of production is during crowded conditions. It is in December 2021 due to school holidays, Christmas, New Year, and the reopening of tourism in Magetan Regency. In that condition, the average production sold by the producer is 1,505 bottles/month, and products sold to the resellers are 839 bottles/month. Meanwhile, the lowest production was during the pandemic in January 2021-June 2021, due to the covid-19 disease outbreak. The average product sold by the producer is 199 bottles/month, and products sold to resellers are 102 bottles/month. The quiet condition is when the tourist area in Magetan Regency is closed from July to November 2021. Normal conditions are during normal days, such as from January to May 2022. The data used in this study used December 2021 data.

The raw material used to produce pasteurized cow's milk is fresh cow's milk. Respondents obtain fresh cow's milk from dairy cooperatives and farmers in Sarangan Village and get milk from their livestock products. The purchase of fresh cow's milk is made every time it will produce pasteurized cow's milk since fresh cow's milk cannot be stored for too long. The price of fresh cow's milk varies from Rp7,000.00-Rp7,500.00 per liter. The ingredients used in making pasteurized cow's milk are pasta or food flavorings, granulated sugar, and salt. The equipment for pasteurized cow's milk production process includes large and small stainless steel pans, gas stoves, stirring devices (wooden spatulas), thermometers, sieves, buckets, stainless steel basins, freezers, refrigerators, and milk cans.

The process of making pasteurized cow's milk is very easy. The procedures are preparing raw materials, cleaning equipment and production sites, and filtering fresh milk before cooking. The process of cooking milk by preparing a large stainless steel pot filled with water and preheating after removing the bubbles slightly, putting a small pot into the large pot earlier, putting the fresh milk in a small pot, and stirring continuously until the temperature reaches 70 ° C-80 ° C. Such temperature measurements use a thermometer. After the milk is cooked, granulated sugar and salt are added and stirred evenly. Then the milk is separated into a container according to the taste you want to make, then add the food flavor and stir until evenly distributed, then wait until it is half cold and then filtered again. After that, put the milk in a 250 ml bottle and label it with a sticker. Then let it sit until it is thoroughly cooled and put in the freezer or refrigerator. Marketing pasteurized cow's milk in Sarangan Village, Magetan Regency, is carried out in 2 ways: marketed alone and sold by producers themself and through.

Business Analytics

Costs are the most important part and must be present in business activities. For example, the average cost incurred by the household-scale pasteurization cow milk business in Sarangan Village, Magetan Regency, can be seen in Table 3.

Table 3. Average Business Costs of The Household-Scale Pasteurized Cow Milk Industry in Sarangan Village, Magetan Regency in December 2021

No	Description	Average (Rp/month)	Persentage (%)
Fixed Costs			
1	Capital interest cost	100.833	1,03
2	Depresiation cost	56.073	0,57
Sum of fixed costs		156.906	1,60
Variable Costs			
1	Raw materials cost	5.722.778	58,36
2	Auxiliary materials cost	377.906	3,85
3	Family labor cost	827.778	8,44
4	Labor cost	205.556	2,10
5	Packaging cost	2.248.917	22,94
6	Transportation cost	36.675	0,37
7	Additional cost	228.778	2,33
Sum of variable costs		9.648.386	98,40
Total cost		9.805.292	100,00

Source: Primary Data Analysis 2022

Table 3 shows that the average total cost of the household-scale pasteurized cow's milk industry in Sarangan Village, Magetan Regency, in December 2021 was IDR 9,805,292.00/month. This cost is divided into fixed cost and variable cost. Average fixed cost of IDR 156,906.00/month (1.60%), and the average variable cost of IDR 9,648,386.00/month (98.40%). The average capital interest cost is IDR 100,833.00/month, calculated using the real interest rate value from Bank BRI's KUR, which is 0.5% per month.

The prices of pasteurized cow's milk sold by the producers differ from those sold to resellers. For those sold by producers, IDR 7,000.00 per bottle, while those sold to reseller was IDR 5,000.00 per bottle. The revenue obtained by household-scale pasteurized cow milk producers in Sarangan Village, Magetan Regency, can be seen in Table 4.

Table 4. Average Business Revenue of Household-Scale Pasteurized Cow's Milk Industry in Sarangan Village, Magetan Regency in December 2021

No	Description	Average production (bottle/month)	Price (Rp)	Average Revenue (Rp/month)	Percentage (%)
1	Sold by Producers	1.505	7.000	10.535.000	71,52
2	Sold to Resellers	839	5.000	4.194.444	28,48
Total Revenue				14.729.444	100,00

Source: Primary Data Analysis 2022

Based on the data in Table 4 in December 2021, the average revenue obtained by household-scale pasteurized cow's milk producers in Sarangan Village, Magetan Regency, is divided into 2, namely revenue sold by themselves of IDR 10,353,000.00 with the sale of pasteurized milk of 1,505 bottles and revenue sold to resellers of IDR 4,194,444.00 with sales of pasteurized milk of 839 bottles. The average total income in December 2021 was IDR 14,729,444.00 with a total sales of pasteurized cow's milk of 2,344 bottles.

The revenue obtained by each respondent is undoubtedly different because it is influenced by the amount of milk production by pasteurized cows. This result is in line with the research conducted by Andani (2019) regarding the analysis of the household-scale cowhide rambak cracker business that each cassava cracker producer gets

different receipts due to the varied production capacity and capital owned.

Profit is the net income from household-scale pasteurized cow's milk producers from pasteurized cow's milk production. The average profit obtained by household-scale cow's milk producers in Sarangan Village, Magetan Regency, can be seen in Table 5.

Table 5. Average Profit of Household-Scale Pasteurized Cow's Milk Industry business in Sarangan Village, Magetan Regency in December 2021

No	Description	Average (Rp/month)
1	Revenue (Rp/month)	14.729.444
2	Total Cost (Rp/month)	9.805.292
3	Profit (Rp/month)	4.924.152

Source: Primary Data Analysis 2022

Based on Table 5, it is known that the average profit obtained by pasteurized cow milk producers is IDR 4,924,152.00 / month. The advantages obtained by each household-scale pasteurized cow's milk producer are different. However, the many or so many benefits received did not make household-scale pasteurized cow's milk producers give up. Household-scale pasteurized cow's milk producers continue to run their business, because the pasteurization process can add to the selling value of whole cow's milk. Hence, they still choose to run a household-scale pasteurization cow's milk business. The main work done by the producer and her husband provides an income of Rp10,000,000.00-Rp15,000,000.00 per month. The profit obtained from the pasteurized cow's milk business contributes 20%-40% of the total household income per month of household-scale pasteurized cow's milk producers in Sarangan Village, Magetan Regency.

Business Efficiency Analysis

The efficiency of the business carried out by the household-scale pasteurization cow milk industry in Sarangan Village, Magetan Regency can be known using the calculation of the R/C ratio. The analysis of the R/C ratio can be calculated by the comparison between receipts and total costs incurred. The magnitude of the efficiency of household-scale pasteurized cow milk business in Sarangan Village, Magetan Regency, can be seen in Table 6.

Table 6. Business Efficiency of household-scale pasteurized cow's milk Industry in Sarangan Village, Magetan Regency in December 2021

No	Description	Average (Rp/Month)
1	Revenue (Rp/month)	14.729.444
2	Total Cost (Rp/month)	9.805.292
3	Efficiency	1,54

Source: Primary Data Analysis 2022

The efficiency of the household-scale pasteurization cow's milk industry in Sarangan Village, Magetan Regency, can be known using the calculation of the R /C ratio, the formula of the R / C ratio, which is a comparison between the total revenue and the total costs incurred. The calculation between the average revenue and the average expenses incurred shows that the efficiency of this household-scale pasteurized cow's milk industry is 1.54. This means the business is already efficient because the R/C ratio value is more than 1. The R/C ratio value of 1.54 can be interpreted to mean that every Rp100,000.00 cost incurred by pasteurized cow milk producers will get a receipt of Rp154,000.00. So, the greater the value of the R/c ratio, the greater the revenue a producer will get.

Business Risk Analysis

Business risk is a consequence or consequence that can occur due to an ongoing business activity or future events. Risk itself is unavoidable but can be anticipated to minimize or reduce the impact of possible risks. Business risk can be calculated using the coefficient of variation (CV) and the lower profit limit (L). The coefficient of variation compares the risks that household-scale pasteurized cow's milk producers have to bear and the amount of profit that household-scale pasteurized cow's milk producers will have. For example, the magnitude of the risk of household-scale pasteurization cow's milk industry business

in Sarangan Village, Magetan Regency, in December 2021 can be seen in Table 7.

Table 7. Business Risks of Household-Scale Pasteurization Cow's Milk Industry in Sarangan Village, Magetan Regency in December 2021

No	Description	Average (Rp/month)
1	Profit (Rp/month)	4.924.152
2	Standard Deviation (Rp/ month)	2.588.664
3	Variation Coeficient	0,53
4	Lower profit limit (Rp/ month)	-253.175

Source: Primary Data Analysis 2022

The risks faced by household-scale pasteurized cow's milk producers in Sarangan Village, Magetan Regency, there are 3, including price risk, business risk, and marketing risk. According to Mamilianti (2020), price risk occurs due to price fluctuations because the absence of certainty of how much the product price can cause losses to producers. The price risk faced by household-scale pasteurized cow's milk producers is related to the fluctuating prices of production materials, so respondents have to spend more on the materials used. Therefore, the strategy made by respondents is to anticipate losses when the price of materials is high, namely by adding a sufficient amount of production materials per the dosage.

The second risk is business risk, which occurs in the production process. According to Mulyani & Herawati (2016), the production process is an activity that creates or adds the usefulness or function of a good or service by using existing factors such as labor, raw materials, tools, machines, and funds to be more beneficial for human needs. For example, this can happen if the quality of fresh milk used as raw material is fresh milk of poor quality. As a result, the milk will pasteurize unsuitable for consumption, so to overcome it before the cooking process, the producers check the fresh milk and pay attention to the cleanliness of tools and materials so that the production process runs smoothly and produces quality and suitable products for consumption.

The last risk is marketing risk. According to Hidayat & Fitriani (2019), marketing risks can result in a decrease in sales and damage to the company's image caused by a reduction in market share and lack of distribution of goods which will eventually result in a reduction of revenue. Producers' strategies for facing marketing risks include a promotion, consumer perception, selling price competition, and limited distribution. Marketing risks can occur if the pasteurized cow's milk is not sold due to weather conditions where some intermediary traders cannot travel to tourist areas due to rain. However, the opportunity for this risk is relatively small because many household-scale pasteurized cow's milk producers choose to sell their own pasteurized cow's milk products at production houses so that consumers can buy them at each producer's home. Also, some producers who sell through resellers have collaborated with a reseller with shops and stalls such as in Cemoro Sewu and Mojosemi so that the intermediary traders are not only those who travel around telaga Sarangan. In addition, this marketing risk occurs due to the difficult licensing of dairy products, where dairy and processed products must be certified by BPOM (Food and Drug Supervisory Agency). The existence of obstacles in licensing resulted in the marketing of pasteurized milk only carried out in the area around Sarangan Village.

Pasteurized cow's milk producers also face obstacles, such as erratic material prices, unsold pasteurized cow's milk stock, sterility in the production process, licensing, and less extensive marketing. Household-scale pasteurized cow's milk producers only rely on their business capital and choose not to use borrowed money from banks, cooperatives, or other credit institutions because the requirements for applying for loans to credit institutions are quite complex and onerous. In addition, the limited capital would increase costs if the materials used to experience a price increase. The erratic price of this material has resulted in producers spending more on the production process, while the selling price of pasteurized cow's milk has been pegged at Rp7,000.00 per bottle.

The second obstacle is the stock of pasteurized cow's milk that is not sold out. Every business must experience ups and downs in product sales and a household-scale pasteurization cow's milk business. Producers produce pasteurized cow's milk daily, but pasteurized cow's milk products are not always sold out. In this case, making pasteurized cow's milk producers incur losses.

The third obstacle is regarding the sterility of the production process, which includes the sterility of fresh milk and the quality of fresh milk that will be used as raw material for making pasteurized cow's milk. In addition, the cleanliness of the room and the tools used to produce pasteurized cow's milk must be considered. The pasteurized cow's milk-making space cannot

coincide with any cooking because it can affect the aroma of milk. The wrong and unhygienic cooking method will also result in pasteurized cow's milk being damaged quickly and unsuitable for consumption.

The fourth obstacle lies in licensing, where dairy products must be certified by BPOM (Food and Drug Supervisory Agency). Household-scale pasteurized cow's milk producers in Sarangan Village, Magetan Regency, have just received a distribution permit from the Magetan Regency Health Office. Some producers also already have MUI (Indonesian Ulema Council) halal certificates. However, promoting BPOM licensing has many complex conditions, so producers have not applied for BPOM permits. The existence of these obstacles has hampered the marketing process out of the city.

The next obstacle lies in less widespread marketing. Household-scale pasteurized cow milk producers in Sarangan Village, Magetan Regency, are still less effective in finding a market, so the market is still very limited. Not only that but the limited market is also caused by BPOM permits that have not been submitted. Household-scale pasteurized cow's milk producers did not dare to market their products out of the city before taking care of BPOM permits, even though they already had a distribution permit from the Magetan Regency Health Office. Therefore, the target of selling pasteurized cow's milk is still small, only limited to local sales, which have not yet come out of Magetan Regency. Household-scale pasteurized cow's milk producers in Sarangan Village, Magetan Regency, have also not fully utilized social media to promote their products.

The solution that can be given is related to the obstacles faced by pasteurized cow's milk producers, the first is associated with the fluctuating price of materials producers seeking to minimize production costs, which include being able to add sufficient production materials following the dosage and can also produce more pasteurized cow's milk so that the purchase of auxiliary materials can be made in large quantities. So that the costs incurred are not much and still get high profits even though the price of pasteurized cow's milk is still pegged for Rp. 7,000.00 per bottle.

Problems related to pasteurized cow's milk stock that is not sold out, the solution that can be done is that household-scale pasteurized cow's milk producers can store pasteurized cow's milk back in a freezer or refrigerator with a period of not exceeding three days, or it can be processed into milk pudding. The problem regarding the sterility of the production process, the solution can be done is that before the pasteurization of cow's milk production process, producers should check the fresh milk first. In addition, if the cooking process is wrong and unhygienic, pasteurized milk will be damaged quickly and unsuitable for consumption. To avoid this, household-scale pasteurized cow's milk producers should pay attention to the cleanliness and sterility of the room and tools used, and how to process pasteurized milk correctly.

Problems related to BPOM licensing, the solution is continuing to sell pasteurized cow's milk products which still rely on a distribution permit from the Magetan Regency Health Office until producers get income to complete the requirements of BPOM permit. Furthermore, regarding marketing that is not yet widespread, while waiting for the management of BPOM permits, pasteurized cow's milk producers can take advantage of the WhatsApp platform and word of mouth strategies as a means of promotion to be better known to the public.

CONCLUSIONS

Based on the analysis results, it can be concluded that the household-scale pasteurized cow's milk industry in Sarangan Village, Magetan Regency, issued an average total production cost in December 2021 of IDR 9,805,292.00/month. The average revenue obtained was RP14,729,44.00/month, so the average profit from the household-scale pasteurized cow's milk industry business is IDR 4,924,152.00/month.

The value of the efficiency of the household-scale pasteurized cow's milk industry in Sarangan Village, Magetan Regency, is 1.54. If the efficiency value is more than 1, the business being run is efficient. It means that every Rp100,000.00 cost incurred by a household-scale pasteurized cow's milk producer will receive a receipt of Rp154,000.00.

The household-scale pasteurized cow's milk industry in Sarangan Village, Magetan Regency, has a coefficient of variation (CV) value of 0.53, and the lower limit value of profit (L) is minus Rp253,175.00. Therefore, it shows that the household-scale pasteurization cow milk business is at risk of losing IDR 253,175.00.

REFERENCES

Andani, P. Y. (2019). *Analisis Usaha Industri Kerupuk Rambak Kulit Sapi Skala Rumah Tangga di Kecamatan Ngariboyo Kabupaten Magetan*. Universitas Sebelas Maret Surakarta.

Arda, M. (2017). Pengaruh Kepuasan Kerja Dan Disiplin Kerja Terhadap Kinerja Karyawan Pada Bank Rakyat Indonesia Cabang Putri

Hijau Medan. *Jurnal Ilmiah Manajemen Dan Bisnis*, *18*(1), 45–60. https://doi.org/10.30596/jimb.v18i1.1097

Ashari, B. H., Wibawa, B. M., & Persada, S. F. (2017). Analisis Deskriptif dan Tabulasi Silang pada Universitas di Kota Surabaya). *Jurnal Sains Dan Seni Its*, *6*(1), 17–21. https://doi.org/10.12962/j23373520.v6i1.21403

Endraswara, S. (2006). *Metode, Teori, Teknik Penelitian Kebudayaan Ideologi, Epistemologi, dan Aplikasi*. PT. Agromedia Pustaka.

Hewan, S. P. dan K. (2019). Statistik Peternakan dan Kesehatan Hewan. In *Journal of Chemical Information and Modeling* (Vol. 53, Issue 9). Direktorat Jenderal Peternakan dan Kesehatan Hewan Kementerian Pertanian RI.

Hidayat, N., & Fitriani, A. (2019). Gurihnya Pembiayaan Kuliner di Indonesia Pendekatan Praktis Memahami Profile Bisnis, Sektor-Sektor Bisnis di Indonesia. In Mashudi (Ed.), *Paper Knowledge . Toward a Media History of Documents* (Vol. 7, Issue 2). Q-Media.

Kurniadi, D., & Islami, A. F. (2019). Perancangan Aplikasi Survei Kepuasan Mahasiswa Berbasis Kuesioner Online. *Jurnal Algoritma*, *15*(2), 43–50. https://doi.org/10.33364/algoritma/v.15-2.43

Mahdiah, N. (2020). Pelatihan Diversifikasi Produk Olahan Susu di Sentra Peternakan Sapi Perah Kelurahan Kebon Pedes. *Jurnal Pusat Inovasi Masyarakat*, *2*(1), 97–103. https://journal.ipb.ac.id/index.php/pim/article/view/29570/19244

Mamilianti, W. (2020). Persepsi Petani Terhadap Teknologi Informasi Dan Pengaruhnya Terhadap Perilaku Petani Pada Risiko Harga Kentang. *Agrika: Jurnal Ilmu-Ilmu Pertanian*, *14*(2), 125–139. https://doi.org/10.31328/ja.v14i2.1390

Mandaka, S., & Hutagaol, M. P. (2005). Analisis Fungsi Keuntungan, Efisiensi Ekonomi dan Kemungkinan Skema Kredit bagi Pengembangan Skala Usaha Peternakan Sapi Perah Rakyat di Kelurahan Kebon Pedes, Kota Bogor. *Jurnal Agro Ekonomi*, *23*(2), 191–208. https://doi.org/10.21082/jae.v23n2.2005.19

1-208

Mulyani, D., & Herawati, H. (2016). Pengaruh Kualitas Bahan Baku dan Proses Produksi Terhadap Kualitas Produk pada UD. Tahu Rosydi Puspan Maron Probolinggo. *UNEJ E-Proceeding, DinamikaGolbal: Rebranding Keunggulan Kompetitif Berbasis Kearifan Lokal*, 463–482.

Rahayu, W. (2011). Analisis Biaya Dan Pendapatan Usaha Tani Wortel Di Kabupaten Karanganyar. *Sepa*, *7*(2), 72–133.

Rizaty, M. A. (2021, September). *Populasi Sapi Perah Jawa Timur Terbanyak Nasional pada 2020*.

Tobing, S. S. W., Lubis, S. N., & Wibowo, R. P. (2021). Analisis Pendapatan Dan Risiko Usahatani Udang Windu Di Kelurahan Belawan Sicanang Kecamatan Medan Belawan. *Jurnal Agrica*, *14*(1), 1–8. https://doi.org/10.31289/agrica.v14i1.4198

Ukkas, I. (2017). Faktor-Faktor Yang Mempengaruhi Produktivitas Tenaga Kerja Industri Kecil Kota Palopo. *Kelola: Journal of Islamic Education Management*, *2*(2), 187–198. https://doi.org/10.24256/kelola.v2i2.440

Umar, Razali, & Novita, A. (2014). Derajat Keasaman Dan Angka Reduktase Susu Sapi Pasteurisasi Dengan Lama Penyimpanan Yang Berbeda. *Jurnal Medika Veterinaria*, *08*(1), 43–46.

Yuniarsih, E. T., Tenriawaru, A. N., Haerani, S., & Syam, A. (2020). Analisis Korelasi Sikap Petani dengan Adopsi Teknologi Budidaya Cabai Di Sulawesi Selatan. *Jurnal Pengkajian Dan Pengembangan Teknologi Pertanian*, *23*(3), 375–385.