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Study Of Added Value Differentiation Of Peranakan Etawa (PE) Goat Milk Products On Agro-Industry In Pakem District Sleman Regency

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Abstract

This research aims for 1) knowing the great added value of differentiation of goat milk products Peranakan etawa, (PE), 2) Analyzing the feasibility of the business processed goat milk Peranakan etawa (PE). The basic method is used by the descriptive method. This method of conducting research uses a case study method located in Sleman Regency precisely at the one of the Agroindustry namely The Agricultural and Rural Training Center of Etawa Goat Farm (P4S - BPKE) which produces processed goat's milk into and (3) derivative products namely milk powder, yogurt, and ice cream. The method of determining respondents uses the purposive sampling method. The types and data sources used are primary data with methods data collections are closed by interviews, observations, and recording. Analysis techniques used to analyze the large value-added differentiation of goat milk products Peranakan etawa (PE) used Hayami method and feasibility of processed goat milk business Peranakan ettawa used the Revenue Cost ratio. The results of the study showed that: 1) Value-added differentiation of goat milk products Peranakan etawa (PE) has generated positive added value. The added value of ice cream is greater than milk powder and yogurt. 2) The Feasibility of processed goat's milk Peranakan etawa (PE) ice cream, milk powder, and yogurt are profitable or feasible to be developed, with the highest feasibility is in ice cream products.

Keywords: Added Value, Feasibility, Goat Milk, Peranakan Etawa (PE), Product differentiation, Sleman.

I. INTRODUCTION

Peranakan Ettawa (PE) goat agro-industry in Sleman Regency, especially in Mount Merapi Plateau, there are Pakem, Turi, Cangkringan District provides promising benefits, as the superior products of livestock that can improve the farmer's welfare. Turi district is a very potential area for the development of PE goat agro-industry because it has strong local market prospects, land facility support, local government support, and counseling and other inputs. The priority of the strategy for

the agribusiness of PE goats in Turi District is to diversify new products with improved quality and continuity of PE goat production. The advanced development strategy is to build an integrated area consisting of PE goat agribusiness unit and PE goat products processed industry into food and beverage (Utami, 2016).

Agro-industry is an industry that processes raw materials from agriculture into goods that have added value that can be consumed by the community. Given the long-lasting nature of agricultural products, the role of the agro-industry is indispensable (Asnidar; Asrida, 2017). The purpose of dairy products processed into several processed variants is to diversify local food products, as well as indirectly increase the demand for raw material production due to the increasing need for raw materials. Diversification of food consumption can overcome food scarcity and increase people's income (Marsigit, 2010). One of the agro-industry that makes differentiation of goat milk products is the Etawa Goat Farm (P4S - BPKE) Agricultural and Rural Training Center, located in Pakembinangun Village, Pakem District, Sleman Regency. Liquid goat's milk is processed into several processed products, namely ice cream, yogurt, and milk powder.

Milk is one of the recommended drinks to be consumed in the condition of the covid 19 pandemics because it can maintain the health and immunity of the body (Livestock, 2020). One of the kinds of milk that are considered good is milk from Peranakan etawa goats (PE) in addition to fresh cow's milk. Many variants of processed goat's milk products can increase consumption of goat's milk because consumers who do not like the smell and taste of fresh goat's milk can enjoy it. Increasing the consumption of processed goat's milk will also increase the number of products produced.

The number of product variants produced, then it is necessary to calculate the amount of the value of processed products. The higher the added value that a product has, the higher the profit earned by the company. The value-added analysis is required to know the highest value-added products so that it can be a consideration for the industry is prioritizing sales. Added value is all added value created at some stage by production factors, including real added value through the transformation of raw materials, labor, and capital, as well as intangible added value through intellectual capital (use of knowledge assets) and exchange of relationships (i.e., building cooperation relationships) (Rizqiah & Slamet, 2014)

Based on this background, this research aims to 1) Analyze the great added value of differentiation of goat milk products Peranakan etawa (PE). 2) Analyze the feasibility of the business processed goat milk Peranakan etawa (PE) at the Training Center of Agriculture and Rural Self-Help Earth Animal Goat Farm Etawa (P4S - BPKE).

II. RESEARCH METHODOLOGY

The basic method of research is a descriptive-analytical method using a qualitative approach. The research site is located at the Etawa Goat Farm (P4S - BPKE) Agricultural and Rural Training Center of Sleman Regency, which produces the deference of goat milk products with one of its products implementing processing using fermentation and producing probiotic drinks. The research time was conducted from July to August 2020. Data collection techniques used in qualitative harvesting are observation, interview, and documentation. Informant determination technique is done by *purposive sampling that is* a data source sampling technique with certain considerations; for example, the person is considered to know best about what we expect (Sugiyono, 2012). The subject of the research in this study is the source of information or people who understand the most about the data needed (Suroso, 2014), namely the chief manager. Data analysis techniques are used to calculate value-added with Hayami Method and calculation of *eligibility of Revenue Cost ratio* and Return on *Investment.*

II.1. Knowing the Great Value Added Differentiation of Peranakan Etawa Goat Milk Products (PE).

Value-added in Financial analysis is defined as the difference between a particular product's final selling price and the direct and indirect input used in making that particular product. The difference is profit for the firm and its shareholders after all the costs and taxes owed by the business have been paid for that financial year. On the other hand, value-added can be said the process of increasing the perceived value of the product in front of the customers (Kay, 1993)

The value-added analysis is done to find out the value of processing carried out against the liquid milk of goats the role of etawa in a wide range of differentiation products. The value-added analysis counted using the Hayami method. The main components in the calculation of value-added are raw *materials, output*/products produced, *labor inputs,* and also other *inputs.* Calculation of added value in goat milk differentiation products Peranakan etawa using per unit of raw materials, i.e., kilogram. Added value for PE goat milk processed products is calculated during the production of a month.

Table 1. Value-Added Data Analysis Techniques with Hayami Method

Variable	Ice Cream	Milk Powder	Yogurt
Output, Input, and Price			
Production / *Output*	A	A	A
Raw Materials /*Inputs*	B	B	B
Labor	C	C	C
Conversion Factor	d = a/b	d = a/b	d = a/b
Labor Coefficient	e = c/b	e = c/b	e = c/b
Product Prices	F	F	F

Average Labor Wage	G	G	G
Income and Profits			
Raw Material Price	H	H	H
Other *Input Donations*	I	I	I
Output Value (Product)	j=d x f	j=d x f	j=d x f
Value-added	k = j – i – h	k = j – i – h	k = j – i – h
Value-Added Ratio	l = (k/j) x 100%	l = (k/j) x 100%	l = (k/j) x 100%

Source: (Hayami et.al., 1986)

Analyzing of Feasibility of Etawa's Peranakan Goat Milk Processed Business
Revenue Cost Ratio

Revenue / Cost Ratio is a comparison between total receipt and total cost with the following formula (Soekartawi, 2006):

$$\text{Revenue Cost Ratio (R/C)} = \frac{Total\ Revenue\ (TR)}{Total\ Cost\ (TC)}$$

Description:

- R/C Ratio > 1, then the business run is profitable or feasible to be developed
- R/C Ratio < 1, then the business is a loss or not worth developing.
- R/C Ratio = 1, then the effort is at break-even

III. FINDING AND DISCUSSION

III.1. Value Added Differentiation of Peranakan Etawa Goat Milk Products (PE).
Value-added is a value increase that occurs because a commodity undergoes processing, transportation, and storage in a production process. The products produced by The Etawa Goat Farm (P4S - BPKE) Training Center of Pakem Sub District, Sleman Regency are milk powder, ice cream, and yogurt. Added value differentiation of goat's milk products can be seen in Table 1.

Table 1. Value Added differentiation of Peranakan Etawa Goat Milk Products in P4S – BPKE Sleman Regency

Variable	Ice Cream (liter)	Milk Powder (kg)	Yogurt (liter)
Output, Input, and Price			
Production / *Output*	90	15	24
Raw Materials /*Inputs*	30	30	24
Labor	5	4.69	6
Conversion Factor	3	0.50	1
Labor Coefficient	0.17	0.16	0,25
Product Prices	55,000	100,000	80.000
Average Labor Wage	75,000	75,000	60.000
Income and Profits			

Raw Material Price	20,000	20,000	20,000
Other *Input*	12,193	11,658	25,115
Output Value (Product)	165,000	50,000	80,000
Value-added	132,806	18,341	34.885
Value-Added Ratio	80.49	36.68	43.61

Source: Primary Data Analysis (2020)

Based on Table 1 the results of the analysis of the added value of goat's milk processing will be, generates positive added value. Processed Peranakan Etawa Goat Milk provides added value in the form of Ice Cream amounting to Rp. 132,806/liter with a ratio of 80.49%, Milk Powder amounting to Rp. 18,341/kg with a ratio of 36.69%, and yogurt milk of Rp. 34.885/liter with a ratio of 43.61%. The added value of ice cream is greater than milk powder and yogurt because the output product of ice cream products is higher than milk powder and yogurt.

Although the price of ice cream is lower than powdered milk and yogurt, it has the highest added value. The high added value is due to the higher production of ice cream compared to other dairy products. This can be seen from the high conversion factor for milk into ice cream, which is 3, while the conversion factor for powdered milk is 0.5 and yogurt is 1. Ice cream is one type of food that is very popular in the world and very popular with all people. Ice cream is also good for health because it is rich in nutrients and includes food with high nutrition because it is made from milk (Hasanuddin et,al., 2011; Mulyani et.al, 2017). A large number of ice cream fans cause high demand for ice cream and affects the amount of production and the added value of the product. Providing added value to a product for example, by processing it, will provide additional production value compared to fresh products (Indarwati et.al., 2015).

III.2. Feasibility of Processed Goat Milk Peranakan Etawa (PE)

The income analysis was used to determine the income of the etawa cross-breed goat (PE) milk processing business. Gaining profit or income is the main objective of processing activities, where processing the milk into ice cream, powdered milk, and yogurt is one of the sources of side income for P4S - BPKE. The main income of P4S - BPKE comes from animal husbandry training and product processing activities. Revenue is obtained from the reduction between total revenue and total cost. Total costs are the sum of fixed costs with variable costs.

The level of income will be greatly influenced by the size of the production achieved. The amount of income or profit really depends on the amount of revenue and the number of costs involved to remove it in the production process (Pasau et al., 2015). Feasibility of Processed Peranakan Etawa Goat Milk can be seen in Table 2.

Table 2. Feasibility of Processed Goat Milk Peranakan Etawa (in one Month)

Type of Calculation	Ice Cream	Milk Powder	Yogurt
Total Revenue (TR)	4.950,000	1,500,000	1,920,000
Total Cost TC)	965,806	949,766	1,082,767
Benefit (B)	3,984,193	550,233	837,233
R/C ratio	5.12	1.58	1.77

Source: Primary Data Analysis (2020)

The three products of differentiation of Peranakan Etawa (PE) cross-breed goat milk provide positive income. In addition, the financial feasibility of all Peranakan Etawa goat milk products is feasible to work on because the R / C ratio is above 1. The highest feasibility is in ice cream

products whose R / C ratio reaches 5. The highest sales for goat milk product differentiation occurred in December. Product sales in that Month averaged 15 liters of ice cream, 20 kg of powdered milk, and 10 liters of yogurt, while the lowest sales occurred in May, namely 0.5 liters of ice cream, 2 kg of powdered milk, 5 liters of yogurt.

The beneficially of Peranakan Etawa Goat milk had shown spreading in the world. Many kinds of studies showed that dairy goat farming is economical to produce goat milk in the world. It makes the household get welfare. The study in the USA had shown the profitability of goat farming similarly, especially when their management did many kinds of the intensive type of product and diversification of goat milk (Hanlein,2017). The study in Swiss showed the goat milk agro-industry got net return in good condition when the milk was sold as such many kind products, especially was processed there inti cheeses and sold as a value-added product from the farm. In another similar study, Goat cheeses have seen a great increase in popularity in the recent year, especially among the more affluent gourmet consumer (Sagar and Ahuja,1993)

IV. CONCLUSION

Value-added differentiation of goat milk products of Peranakan Etawa has positive added value. The added value of ice cream is greater than milk powder and yogurt. Feasibility of processed goat's milk Peranakan etawa namely ice cream, milk powder, and yogurt, are profitable or feasible to be developed, with the highest feasibility is in ice cream products.

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