

Doi: 10.21059/buletinpeternak.v43i1.43087

## Relationship Between Dairy Cattle Farming Motivation and Farmer's Attitude Towards Portable Milking Machine

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### ABSTRACT

The research was a case study for dairy cattle farmers being the members of Sarono Makmur Cooperative at Cangkringan District, Sleman Regency, Yogyakarta. The objectives of the research were (1) to explore dairy cattle farming motivation based on multidimensional approach, and (2) to analyze the relationship between the dimensions of dairy cattle farming motivation and the attitude of farmers towards the using of portable milking machine. 63 dairy cattle farmers, selected by purposive random sampling, participated in the research. Data were collected using survey method by interviewing the farmers based on the questionnaire already prepared. Spearman correlation was used to analyze the data. The results showed that most of farmers had high dairy cattle farming motivation including ease of farming management (95.24%), family labor utilization (93.65%), economic motives (92.06%), safety motives (92.06%), and land utilization (84.13%). As well as the attitudes, most of farmers (92.06%) had positive attitudes towards portable milking machine utilization. There were positive significant relationship between attitude and family labor utilization ( $P < 0.05$ ), safety in farming ( $P < 0.05$ ), economic motives ( $P < 0.10$ ), and land utilization ( $P < 0.10$ ). The conclusion of the research was that the high motives of family labor utilization, safety, economic, and land utilization to encourage the farmers raising dairy cattle, the high positive attitude of farmers towards the utilization of portable milking machine.

Keyword: Dairy cattle, Motivation, Portable milking machine

#### Article history

Submitted: 1 October 2018  
Accepted: 19 February 2019

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### Introduction

The decision-making process in dairy cattle is an important thing to do. The cattle farmers do not only have one consideration or a motive in decision-making process for dairy cattle farming, but also have other motives. The application of theories of motivation in psychology is used to explain human behavior (Lee *et al.*, 2015). The approach through many motives in dairy cattle farming is multidimensionally more accurate to value everything preferred by the cattle farmers, so that it will predict better the measures that will be done by the farmers. Through several motives, the farmers will try to meet as many motives wanted as possible.

Dairy cattle farming applied by the farmers in the farming system is more on a supporting aspect to reduce the risk of farming. The farmers from small to mid-scales prefer the cattle utility value for their primary needs. The purpose of running a business, besides maximizing profits, has other targets. Every farmer wants to maximize profit, but at the same time tries to maintain land conservation for next generation legacy and uses the involvement of family members in the farming

activities (Basarir, 2002). The result of the researchers shows that the motive of utilizing family labor is the highest for the farmers in keeping the goats in the slope of Merapi mountain, followed by the motive of utilizing land and the motive of economy (Haryadi, *et al.*, 2015).

The growth of farming business is affected by many factors, one of them is innovation (Barringer and Greening, 1989). Further said by Gielen, *et al.* (2003), innovation is an important thing in the success of farming business in a tight competitive era.

In the dairy cattle farm business, milk is the result of a highly expected product and is an important contribution as the farmers' main income. Most of the dairy cattle farms in Indonesia are in small-scaled businesses (80%) and in mid-scaled ones (17%) with a very low business efficiency level; however, it can still be increased through adding a business scale (Swastika, 2011). The adding of a business scale certainly needs to be supported with the efforts to produce high-quality milk. One of them, conducted by a group of farmers in District of Cangkringan, Sleman, Yogyakarta, is through introducing milking innovation to the farm members. The introduction

of milking innovation is fully supported by Farm Cooperative Sarono Makmur through providing portable milking machine to the group of farmers of the cooperative. The machine could be used by them under several conditions determined by the cooperative such as the obligation of paying the rent and the result of milk produced must be delivered to the cooperative.

The success of innovation depends on human factor (Marcati *et al.*, 2008). Wright *et al.* (2001) states that the human attitude is an important thing in business innovation. Wibowo and Haryadi (2006) categorize the attitude to be positive and negative. The negative attitude toward innovation is pictured as a tendency to reject the use of innovation and on the contrary for the positive one. One's attitude toward innovation is not always permanent. Further, Dobbs and Hamilton (2006) explain that a more positive result will be achieved if those involved in the business have high motivation in running the business. This paper describes the result of motivation exploration of dairy cattle farming based on multidimensional approach and analyzes the relationship among farming motivation dimensions with the farmers' attitude concerning the use of portable milking machine.

### Materials and Methods

The research was a case study on dairy cattle farmers of the cooperative members of Sarono Makmur in the district of Cangkringan, Sleman Yogyakarta. 63 farmers were involved in the research. The respondents were chosen as purposive random sampling that was the active members of Sarono Makmur Cooperative who have and still experience the use of portable milking machine in the milking process.

Kinds of primary data collected were the reasoning statements of dairy cattle raising seen from the dimensions of raising easiness, family labor utilization, economy, raising security and land utilization. Besides, data was collected in line with the farmers' attitude towards the use of portable milking machine in the milking process through a multidimensional approach consisting of cognitive, emotional, and intention aspects (Eagly and Chaiken, 1998; Piderit, 2000).

The tools used in primary data collection were the questionnaires that had been prepared and tested in validity ( $r > 0,300$ ) and in reliability (Cronbach's Alpha  $> 0,600$ ). The measurement of motivation variable and attitude used the Likert's five-point scale, starting from highly agree to highly disagree (Revilla *et al.*, 2014). Data was

analyzed using Rank Spearman Correlation (Bryman, 2016).

## Results and Discussions

### Dimension of farming motivation

Most of or more than 50% of dairy cattle farmers as the members of the Sarono Makmur cooperative had a high category for many reasons or motive dimension in making a decision to raise dairy cattle (Table 1). According to the motivation multidimensional approach, it showed that most of the farmers had a high dimension level for security reason in dairy cattle farming (92.06%). The same result applied to the dimension of easiness in raising (95.24%), land utilization (84.13%), economy (92.06%) and family labor utilization (93.65%).

The dimension of easiness in raising of cattle was the main reason experienced by most farmers in making a decision to raise dairy cattle as a farming business. This was possibly done due to most respondents' professions were farmers who got used to raising dairy cattle despite unpleasant experience when affected by the Merapi eruption in 2010. Currently they have been relocated and have lived in a permanent area provided by the government. The result of the research from Alviawati *et al.* (2016) revealed that the survival strategy and livestock farming-based consolidation were dominant topologies implemented at post-disaster by the farmers as the objects of the Merapi eruption in 2010. Dairy cattle farming, for respondent farmers, was a legacy business when they were still in the location before Merapi erupted, and it continued as a reliable farming business in supporting the farmers' family lives even when they were already in a permanent area.

The dimension of land utilization, despite in the high category, was yet to be a strong reason by some farmers (15,87%) to push them to farm dairy cattle (Table 1). It was possibly due to a different location currently compared to that before the Merapi eruption in 2010, where there was a limited land owned in a permanent area of living (Nofrita and Krol, 2014) and further land location for the farmers to find the feed for dairy cattle.

### Dimension of the farmers' attitude

The farmers as the members of the Sarono Makmur Cooperative were demanded to produce highly-qualified milk so that it would be able to be accepted by the milk cooperative. One of the factors of lacking quality in milk produced by the farmers was the lack of hygiene in the milking

Table 1. Percentage of distribution in the category of motivation dimension of dairy cattle farming

Motivation dimensions	Category percentages	
	High	Low
Security	92.06	7.94
The easiness of raising	95.24	4.76
Land utilization	84.13	15.87
Economy	92.06	7.94
Family labor utilization	93.65	6.35

Table 2. The distribution of the farmers' attitude categories towards portable milking machine

Variables	Categories	Percentages
Attitude indicators:		
	- Cognitive	High Low
- Emotional		
		Positive Negative
- Intention		
		Interested Not Interested
Attitudes		
		Positive Negative

Source: Rohman (2017).

Table 3. The relationships between the farming motivation dimensions and the attitudes towards portable milking machine

Dimensions of motivation variables	r	Probability
Security	0.259	0.040**
Easiness of raising	0.153	0.230
Land utilization	0.222	0.081*
Economy	0.229	0.071*
Family labor utilization	0.270	0.032**

\*\* P<0.05; \* P<0.10.

process which was manually done using hands. The Saron Makmur cooperative had been attempting to facilitate the farmers to produce highly-qualified milk through providing portable milking machine. Table 2 showed that most farmers (92.06%) had a positive attitude in the use of portable milking machine in the milking process. This could be a good way for the Saron Makmur cooperative to motivate the farmers to produce highly-qualified milk through a more hygienic milking process.

Based on the attitude indicators seen from Table 2, it showed that the level of knowledge for most farmers (98.41%) indicated the optimistic expression of the positive evaluation on portable milking machine. Most farmers (80.95%) also had a positive feeling on portable milking machine. Although most farmers had interest or intention in the use of portable milking machine, there were few of them (31.75%) showed uninterested feeling in the use of portable milking machine.

#### Relationships between the farming motivation dimension and the attitude towards portable milking machine

Based on Table 3, of many farmers' motivation dimensions in raising dairy cattle, it showed that the motive dimensions, having significantly positive relationships with the farmers' attitude towards the use of portable milking machine, were the security in the raising business (P<0.05), land utilization (P<0.10), economy (P<0.10) and family labor utilization (P<0.05). The only motivation dimension, not significantly related with the farmers' attitude in the use of portable milking machine, was the easiness of raising (P>0.10). It was possibly done because the dairy cattle farming was a legacy business from previous generations, so that the farmers got used to managing this business based on knowledge, technology and skills inherited to their generations. Besides, the farming business was still traditional, which meant that the culture of working did not aim to productivity aspect yet (Lestariningsih *et al.*, 2008).

The farmers' positive attitude towards the use of portable milking machine would be formed through the escalated support of the farmers to raise the dairy cattle due to security reason in the raising business and also due to family labor utilization reason. The same thing applied to the high reasons of economy and land utilization in dairy cattle farming made a positive attitude for the farmers towards the use of portable milking machine.

#### Conclusions

Based on the result of the research, it could be concluded that the positive attitude towards portable milking machine would be formed through the high motive of family labor utilization that pushed the farmers to raise dairy cattle. The high intensity of security reason underpinning the farmers to raise dairy cattle would also form a positive attitude towards portable milking machine. The positive attitude towards portable milking machine would also be formed through the high motive of land utilization and economy in dairy cattle farming. The motive of easiness in raising dairy cattle did not determine either the positive or the negative attitude of the farmers towards the innovation of portable milking machine.

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