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Farmer Motivation Towards the Development of Honeybee Farming in Bali Province

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Abstract

Bali Province is a province that has abundant natural resources that can provide benefits in maintaining its sustainability. As an area with a tropical climate, Bali has a very large role seen from how to produce to be able to market honey. This study aims to analyze the motivation of farmers, the factors that influence the motivation of farmers, the problems of farmers and the development strategy of honeybee cultivation in Bali Province. This research was conducted in all regencies and cities in Bali Province. Sampling in this study used a purposive sampling method with a total of 189 respondents. The data analysis method used in this research is quantitative and qualitative descriptive analysis. The results of this study indicate that the level of motivation of farmers in the development of honeybee farming in Bali Province is in the high category with an achievement score of 3.74. Factors influencing the motivation of farmers in the development of honeybee cultivation are age, formal education, non-formal education, number of family dependents, land area owned, knowledge, attitudes, and communication intensity. The problems of farmers in the development of honeybee cultivation are difficulties in obtaining superior seeds, mostly empty stup boxes, capital, pests, and the harvest system is still not maximized. The strategies of farmers in developing honeybee cultivation are intensive counselling strategies, product procurement strategies, post-harvest strategies, and marketing strategies.

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1 Introduction

Livestock development aims to increase the livestock population, expand employment, and support the industrial sector and is expected to improve the standard of living of the community. Along with the increasing population in Indonesia, the need for food ingredients is increasing. Based on this need, many individuals and groups are looking for innovations to get good quality food ingredients.

As a tropical country, Indonesia has enormous potential to cultivate honeybees. Indonesia also has a high source of biodiversity in the form of both flora and fauna. With a forest area of around 94.1 million hectares or 50.1 percent of the total land area, the forest products obtained are very abundant. The wealth of forest resources has a very high economic value that can support the welfare of the community. Non-timber forest products that are commonly managed and utilized by the community are resins, essential oils, and honey. Honey is a non-timber forest product that makes a very high contribution to the community around the forest.

Types of native Indonesian bees include forest bees (Apis dorsata), local bees (Apis cerana), dwarf bees (Apis florea), small bees (Apis andreniformis), Kalimantan red bees (Apis koschevnikovi), mountain bees (Apis nuluensis), local Sulawesi bees (Apis nigrocincta), and stingless bees (Trigona Sp.) (Melati, 2009). Honey beekeeping is one of the rural industrial businesses that can play a role in fulfilling the economic needs of the family, to support the community's economy. Honey is a food in the form of a thick liquid that has a natural sweet taste produced by bees made from flower nectar. Honey is rich in nutrients and has many benefits for human health. Forest honey production has begun to be well managed because the potential of forest honey is large enough to improve the economy of communities around the forest (Rollin et al., 2013; Geslin et al., 2017).

Honeybees have long been cultivated by farmers in Bali Province, both for personal consumption and as a product that can improve the community's economy. Honey is one of the non-timber forest products that is currently very potential to be developed because it has two main functions, namely: improving nature conservation and also improving the community's economy (Naug, 2009; Meixner, 2010).

Based on the above background, it is necessary to conduct research on community motivation in the development of honeybees in Bali Province. The results of this study are expected to provide information on the level of motivation of farmers, factors that influence motivation in cultivating honeybees, farmer problems and designing farmer strategies in the development of honeybee cultivation (Lalani et al., 2016; Brown et al., 2021).

2 Materials and Methods

This research was conducted in all regencies and cities in Bali Province. The selection of this location was determined purposively, namely the technique of determining the location sample intentionally or with certain considerations. The consideration is that in each regency or city in Bali Province, there are farmers who cultivate honeybees. The population in this study amounted to 630 farmers, (Karangasem: 125, Bangli: 75, Klungkung: 65, Gianyar: 50, Denpasar: 37, Badung: 53, Tabanan: 50, Jembrana: 75 and Buleleng: 100) data were obtained from each district/city Livestock Service Office that cultivates honeybees. Sampling in this study used a purposive sampling method with a total of 189 respondents (30% of the total population). Data collection methods in this study were conducted by observation, interview, literature study and documentation.

The types of data required in this study are primary data and secondary data. Observations and interviews were conducted to obtain primary data. Interviews were conducted in a structured manner with the help of a questionnaire. Secondary data is obtained through the search for theories related to the research. The data obtained will be analyzed qualitatively and quantitatively. Qualitative analysis was conducted to analyze the condition of honeybee farming farmers. Quantitative analysis was used to analyze farmer motivation and factors influencing farmer motivation towards honeybee farming as well as honeybee farming development strategies. The collected data were then tabulated and further analyzed to answer the research objectives. The data analysis method used in this research is quantitative and qualitative descriptive analysis.

3 Results and Discussions

Respondents' characteristics

This study involved 189 honey beekeeper respondents in Bali Province. The identity of the respondents who took part in this part of the study includes age, education level, and occupation of the respondents which will be described as follows.

Age

The characteristics of respondents in this study when viewed from age, the distribution picture can be seen in Table 1 below.

Table 1
Frequency Distribution of Respondents' Age

No.	Age (years)	Frequency	Percentage (%)
1	< 17	0	0,00
2	17-64	176	93,12
3	> 64	13	6,88
Total		189	100

Source: Data processed from survey results

Based on the results showed that most respondents were aged 17-64 years with a percentage of 93.12% while respondents aged> 64 years with a percentage of 6.88%. This shows that respondents are still in the productive age category, namely farmers still have higher labour productivity in honey beekeeping.

Education

Based on the results of data tabulation carried out according to the educational background of the respondents, the following picture is obtained:

Table 2
Frequency Distribution of Respondents' Education Level

No.	Educational Background	Frequency	Percentage (%)
1	No school	0	0
2	Elementary school	27	14,29
3	Junior high school	41	21,69
4	Senior high school	107	56,61
5	Scholar	14	7,41
Total		189	100

Source: Data processed from survey results

Based on the results of data tabulation carried out following the respondent's educational background, it can be seen that the education level of respondents in the elementary school category was 27 people with a percentage of 14.29%, the junior high school category was 41 people with a percentage of 21.69% and Bachelor's degree was 14 people with a percentage of 7.41% while the highest was SMA / SMK, namely 107 people or 56.61%. According to Suarta et al. (2020), the age group is still young, which is an age where the ability to communicate is good because there is still a great willingness to innovate to improve performance. This shows that the respondents' level of education to cultivate honeybees has a very high chance can market their products.

Occupation

The characteristics of respondents in this study when viewed from work, the distribution picture can be seen in Table 3 below.

Table 3
Distribution of Respondents' Occupations

No.	Occupation	Frequency	Percentage (%)
1	Unemployed	7	3,70
2	Farmer/Rancher	123	65,08
3	Labour	35	18,52
4	Private employee	24	12,70
	Total	189	100

Source: Data processed from survey results

Based on the results of the study, the respondents' jobs as labourers were 35 people with a percentage of 18.52%, private employees as many as 24 people with a percentage of 12.70%, not working as many as 7 people with a percentage of 3.70%, while the highest respondents' jobs were as farmers and breeders as many as 123 people with a percentage of 65.08%. This condition shows that respondents are mostly in the agricultural and livestock sectors so they can be more capable of cultivating honeybees to market them well.

Motivation level of farmers in the development of honeybee cultivation in Bali Province

According to Notoatmodjo (2010), motivation is a conscious effort or action to find out a person's behavior so that he is moved to be able to act to do something to achieve certain results or goals. There are various opinions about motivation. However, there is a similarity of opinion regarding the definition of motivation, namely the impetus from within a person that causes a person to carry out certain activities to achieve certain goals. The development of an organization is influenced by management in the organization. The organization plays a role in determining strategies for managing its organization (Dananjaya et al., 2020).

The indicators in this study used to measure community motivation consists of 5 indicators, namely (1) length of honey beekeeping, (2) frequency of farmers participating in counselling, (3) ease of honey beekeeping, (4) income of honey beekeepers, (5) ease of marketing honey. Based on the results of the research the level of motivation of farmers in the development of honeybee cultivation can be seen in Table 4.

Table 4
Motivation Level of Farmers in the Development of Honeybee Cultivation in Bali Province

No.	Variable Indicator	Mean Score	Category
1	Duration of Honeybee Farming	4,07	High
2	Frequency of Farmers Attending Counselling	3,49	High
3	Ease of Raising Honeybees	3,87	High
4	Income of Honey Beekeepers	3,56	High
5	Ease of Marketing Honey	3,73	High
	Farmer motivation	3,74	High

Source: processed primary data

Based on the research results in Table 1, it shows that the level of motivation of farmers in the development of honeybee cultivation is in the high category with the achievement of a cumulative score of 3.74. This indicates that farmers have high motivation to cultivate honeybees. Farmers in Bali Province are very interested in cultivating honeybees because there is a lot of demand for honey from consumers as well as self-consumption by honey beekeepers.

The results of the study seen from the five variable indicators to measure the level of motivation showed that the length of honey beekeeping received a high category with the achievement of a score of 4.07. This proves that farmers have long cultivated honeybees, and some have been hereditary in cultivating them. In raising honeybees, farmers only need to prepare stups for honeybees and flower plants as honeybee feed. All types of flowers can be utilized by honeybees, including grasses and trees. These plants will provide nectar and pollen for honeybee feed and can also be used to develop honeybee farming businesses (Swanson, 2001; Casadesus-Masanell & Ricart, 2010).

These honeybees work by themselves so that they can produce honey. So, it can be seen that raising honey is very easy, it's just that farmers must be diligent in caring for honeybee feed such as flower plants. With the presence of flower plants as feed, farmers can also preserve the surrounding environment by utilizing the yard as a place to feed honeybees (Krishnayana et al., 2019).

The development of honeybee cultivation in Bali Province is expected to continue to increase, due to the known health benefits of honeybees. Besides producing honey, they can also produce pollen so these bees are very helpful for farmers in the field of pollination of fruit and flower crops so that the productivity of fruit and flower crops increases (Al-Ghamdi et al., 2011; Tome et al., 2020).

Factors affecting farmers' motivation in the development of honeybee cultivation in Bali Province

Wahjosumidjo (1984), states that motivation comes as a psychological process caused by two factors, namely factors from within a person which are usually called intrinsic factors, while factors from outside a person are usually called extrinsic factors. Intrinsic factors can be personality, attitude, experience, education, and future goals. Extrinsic factors can be generated by various sources such as the environment, other people and so on. The importance of community participation is very helpful in the success of a business (Suarta et al., 2021).

Based on the results of the analysis of factors affecting the motivation of honey beekeepers in Bali Province consists of eight independent variables, namely Age (X1), Formal Education (X2), Non-Formal Education (X3), Number of Family Dependents (X4), Area of Land owned (X5), Knowledge (X6), Attitude (X7), Communication Intensity (X8).

Table 5
Multiple Linear Regression Analysis Results
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.739	.274		5.078	.000
	Age	.401	.208	.034	8.736	.000
	Formal education	.216	.042	.053	6.098	.000
	Non-Formal Education	.034	.036	.033	2.645	.001
	Number of Family Dependents	.074	.050	.260	2.786	.000
	Land area owned	.197	.052	.224	3.767	.001
	Knowledge	.643	.455	.506	10.132	.000
	Attitude	.312	.052	.023	6.491	.000
	Communication Intensity	.108	.041	.010	2.873	.003

Note: Dependent Variable: Motivation; source: processed primary data

Based on the analysis results in Table 5, the multiple linear regression equation of factors affecting the motivation of honey beekeepers in Bali Province is:

$$Y= 4.739 + 0.0401X1 + 0.216X2+ 0.034X3 + 0.074X4 +0.197X5 + 0.643X6 + 0.312X7 - 0.108X8.$$

Based on the t-test results, it can be seen that the t-value of each independent variable is:

1) The age of the farmer has a t value> than the t table value (2.736>2.602), this means that the age of the farmer has a significant effect on the motivation of honey beekeepers in Bali Province. The age of the farmer is included in the productive age, namely the age that has excellent communication skills because there is still a great willingness to innovate to improve performance (Suarta et al., 2021). At a young and productive age, generally have a high work spirit, high curiosity and interest in adopting a high innovation (Soekartawi, 2002).
2) Formal education has a t value> than the t table value (6.098>2.602) this means that formal education has a significant effect on the motivation of honey beekeepers in Bali Province. The level of formal education affects the quality of human resources. The higher the education, the higher the quality of human resources which will ultimately improve one's performance (Suarta et al., 2021).
3) Non-formal education has a t value> than the t table value (2.645> 2.602) this means that non-formal education has a significant effect on the motivation of honey beekeepers in Bali Province. The number of courses obtained by farmers will make farmers' insights better so that farmers are motivated to raise honeybees.
4) The number of family dependents has a t value> than the t table value (2.786> 2.602) this means that the number of family dependents has a significant effect on the motivation of honey beekeepers in Bali Province. The fewer the number of dependents of the farmer's family, the more prosperous the farmer will be. Farmers will be more focused on developing their business.
5) The area of land owned has a t value> than the t table value (3.767> 2.602) this means that the area of land owned has a significant effect on the motivation of honey beekeepers in Bali Province. Farmers who have a large area of land will be motivated to develop a honeybee business because, with a large area of land, farmers will be more flexible in preparing plants as a place for honeybee food.

6) Knowledge has a t value> than the t table value (10.132>2.602) this means that knowledge has a significant effect on the motivation of honey beekeepers in Bali Province. The higher the knowledge of farmers, the faster they are motivated to develop their business. It is evident from the research results that farmers with higher knowledge are more quickly motivated to develop honeybee businesses.
7) Attitude has a t value> than the t table value (6.491>2.602) this means that attitude has a significant effect on the motivation of honey beekeepers in Bali Province. The positive attitude shown by farmers will accelerate the development of honeybee businesses because, with a positive attitude shown by farmers, farmers will be motivated to develop their businesses and try to invite fellow farmers to develop honeybee businesses.
8) Communication intensity has a t value> than the t table value (2.873>2.602), this means that attitude has a significant effect on the motivation of honey beekeepers in Bali Province. The higher the intensity of communication shown by farmers, the more motivated farmers will be in running a honeybee business. Effective communication occurs when the message conveyed can be understood by others so that there is a common understanding between the giver and receiver of the message and stimulates the recipient of the message to do something or follow up on the message that has been conveyed (Tambunan, 2019).

Problems of farmers in the development of honeybee cultivation in Bali Province

Based on the research results, the problems of farmers in the development of honeybee cultivation in Bali Province are:

1) Difficulty in obtaining superior seeds.
   Honeybee farming has many benefits, especially for human health. The honey produced by honeybees is very potent in maintaining the health of the body and can treat all kinds of diseases. To get maximum results from honeybee cultivation, farmers find it difficult to get good quality bee seeds, so honey production is sometimes not as expected.
2) Honeybees often run away.
   The shortcomings of farmers in maintaining production continuity are that farmers cannot keep bee feed in the form of flowers available throughout the year. Lazy farmers planting flowers that bees like cause bees to often run away because there is no food.
3) Most stup boxes are empty.
   As a result of the lack of bee feed, the bees will eat their honey so that after the honey runs out, the bees will leave the hive. In this study, many empty beehives (stups) were found.
4) Capital.
   Beekeepers are generally small farmers, so capital is an inhibiting factor in developing honeybees.
5) Pests
   Pests that often interfere with beekeeping are ants and birds of prey, so bees are often found leaving the hive to start a new life.
6) Harvesting methods are still not maximized.
   Due to the limited knowledge of the farmers, the farmers have not been able to process the honey harvest. Farmers can only sell in the form of honey even though if processed it will be able to produce honey soap, honey scrubs and so on.

Farmers' strategies in the development of honeybee cultivation in Bali Province

Based on the results of the research, the strategies of farmers in the development of honeybee cultivation in Bali Province are:

1) Intensive counselling strategy
   The lack of understanding of honeybee cultivation in Bali Province causes the production of honey produced by farmers to be less than optimal. The role of extension workers is expected to be more

intensive in visiting farmers so that farmers know about honeybee cultivation, want to carry out advice from extension workers and are skilled in harvesting the results of honeybee cultivation.

2) Product procurement strategy
   Honeybee farming in Bali Province is a side business of farmers so the products produced by farmers are not so much. Consumers often buy honey products in large quantities by collecting the results of several farmers and then accommodating them into one. For this reason, farmers are expected to expand this honeybee cultivation business so that their business results increase.
3) Post-harvest strategy
   The lack of understanding of farmers in processing honey into high-value materials causes farmers not to benefit much from honeybee cultivation. For farmers to get greater profits, farmers must be taught how to process honey so that it has a high economic value such as making honey soap, honey scrubs, honey masks and others.
4) Marketing strategy
   The main weakness of farmers in Bali is marketing. Farmers can generally produce but cannot market so the results obtained are not maximized. Extension workers should provide knowledge to farmers on how to market honey products from farmers directly to consumers both online and offline so that farmers get greater profits.

4 Conclusion

Based on the results and discussion above, it can be concluded that:

a) The level of motivation of farmers in the development of honeybee cultivation in Bali Province is in the high category.
b) Factors influencing the motivation of farmers in the development of honeybee cultivation in Bali Province are age, formal education, non-formal education, number of family dependents, land area owned, knowledge, attitudes, and communication intensity.
c) The problems of farmers in the development of honeybee cultivation in Bali Province are difficulties in obtaining superior seeds, mostly empty stup boxes, capital, pests, and harvesting methods are still not optimal.
d) Farmers' strategies in developing honeybee cultivation in Bali Province are intensive counselling strategies, product procurement strategies, post-harvest strategies, and marketing strategies.

Suggestion

Based on the results of the analysis and discussion that has been done in this study, some suggestions can be given as follows:

a) Honey beekeepers in Bali Province can increase their motivation by increasing honeybee productivity from production to marketing.
b) The Bali Provincial Government provides counselling to farmers regarding good honey farming techniques from production to marketing.
c) Honey beekeepers in Bali Province should package honey products up to labelling so that honey products can be recognized by the wider community.

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