Entrepreneurial Behavior of Long Peppers (*Piper Retrofractum Vahl*) in Bluto District, Sumenep Regency

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ABSTRACT

The development of long-pepper farming has good economic prospects and agro-climatically, Sumenep was very suitable for the long pepper farming. However, this opportunity was not widely exploited by farmers to manage crops intensively. Entrepreneurial behavior really determines this. This research aims to know the entrepreneurial behavior of long pepper farmers and to know the factors that influence their entrepreneurial behavior. Primary data was collected using questionnaires from a sample of 50 farmers. Data were analyzed using descriptive statistics and multiple linear regression. The results of the descriptive analysis showed that most farmers have good enough entrepreneurial behavior for the three indicators that characterize them (future orientation, risk taking, task and results orientation, and innovative) and most farmers have good entrepreneurial behavior for the other two indicators (self-confidence and persistent). The regression results showed that experience and farmer group membership have a positive effect on farmers' entrepreneurial behavior, while education level has no significant effect.

Keywords: *Entrepreneurship; Entrepreneurial Behavior; Long Pepper*

INTRODUCTION

The development of long pepper has good prospects from an economic perspective. The need for long pepper as an industrial raw material is expected to continue to increase in line with the development of the traditional and modern medicine industry which tends to "back to nature" (Arifiyanti et.al.,2009). The needs of the international market are also still wide open. In 2019, Indonesia meets one-third of the needs of the international market. In addition to promising market needs, the price of long pepper is also relatively high, and the price fluctuation is not as large as that of cayenne pepper. The lowest price of dried long pepper in 2021 reached IDR 48,000 and the highest was IDR 99,000 per kilogram of stored dried paper (Hasan & Ihsannudin, 2022a). Based on its agroclimatic, Madura is an ideal place for the growth of long pepper peppers because environmental

conditions, both temperature and soil in Madura are most suitable for its growth (Ferdiansyah et.al., 2009). The economic and agroclimatic potential has not been widely utilized by farmers in Madura, especially in Sumenep Regency. This is shown from the insignificant development of land area and production. In 2019, the area of long pepper land in Sumenep 2. 576.94 hectares with a production of 9,043.49 tons. In 2020, there was an increase in land area of 13.8% (to 2,587.53 hectares) but production only increased by 0.4% (to 10,299.67 tons). Even the results of the research Anisah & Hayati (2017) showed that most farmers (50.01%) tended not to continue their intensive cultivation of long pepper .

In addition to economic potential and agroclimatic suitability, there are other factors that have a significant role in supporting the success of farming. Result of Rusadi et.al., (2015) shows empirical evidence that farmers' entrepreneurial behavior has a significant influence on the success of their farming. Likewise, the results of the research Lans et al. (2017) which shows that agricultural entrepreneurship has a major impact on business growth and survival. Especially with rapidly changing economic and business conditions, it requires farmers to have good entrepreneurial behavior so that they have high competitiveness to face these changes (Mukti et.al., 2018). Hasan & Ihsannudin (2022b) shows that some long peppers farmers have not shown good entrepreneurial behavior, for example, farmers will only seriously take care of their peppers when the price is high and there is no effort to provide higher added value. In fact, according to one of the farmer groups, the lowest price of long pepper has been profitable so far. The research of Hasan & Ihsannudin (2022b) only mentions one characteristic of entrepreneurship in the long pepper farming business in Sumenep. According to Benjamin (2018) there are several indicators of entrepreneurial behavior, including future-oriented, risk-taking, task and result-oriented, confident, innovative, and persistent/hardworking. Therefore, more in-depth research is needed on the characteristics of farmer entrepreneurship with more indicators. On the other hand, most previous studies such as Rusadi et al. (2015); Khairiyakh et.al. (2019); dan Purnama et.al. (2022) analyze the influence of entrepreneurial behavior on the success or performance of farming. Research that analyzes the factors that determine farmers' entrepreneurial behavior is still very limited, even though this is important. With an understanding of the factors that affect

entrepreneurial behavior, there will be a basic tone for starting to improve the entrepreneurial behavior of farmers. If this is achieved, the benefits are not only on the micro scale (the success of farming) but also on the macro scale, which can be useful in influencing the success rate of investment that accelerates development and economic growth in the agricultural sector (Saghaian et al., 2022). Based on the description above, the purpose of this study is to find out the characteristics of the entrepreneurial behavior of long pepper farmers and the factors that affect the entrepreneurial behavior of long pepper farmers in Sumenep.

RESEARCH METHOD

This section should explain how the research was conducted. It should be written clearly and completely containing a clear description of (i) population and sampling, (ii) data measuring and collecting, (iii) variable and data analysis. This research method should be sufficiently detailed to reproduce the described procedure. For qualitative research, please adjust this method to the scientific writing habits while considering the repeatability of the research. It was unnecessary to write common analysis methods (e.g., F-test formula, t-test), but just refer to your source. References of original methods/procedures must be stated, and all modifications of procedures (if any) should be explained. Symbol description of the model was suggested to be written on narration.

The research was conducted in Bluto District, Sumenep Regency with the consideration that Sumenep has the largest land area compared to other districts where the production of long pepper in Sumenep is 51% (10,299.67 tons) of the total pro in Madura and Bluto District is the largest producer of long pepper (26.8%) compared to other sub-districts in Sumenep Regency (BPS, 2021). The study population is long pepper farmers in Bluto District, the number of which cannot be known for sure. Samples were taken from several selected villages with the number of respondents calculated by the formula adopted to Lemeshow et al (1990), in Hasan (2020) the equation of the Lemeshow formula can be written:

$$n = p.(1-p)\left(\frac{Z_{\propto}}{e}\right)^2$$

$$n = 0{,}5.(1 - 0{,}5)\left(\frac{1{,}960}{0{,}15}\right)^2$$

$n = 0{,}5.(0{,}5)(13{,}06)^2 = 42{,}68 = 43$

The number of samples is represented by n, Z is the score on the normal curve for a 95% deviation of 1.960, p is interpreted as the expected proportion of the population, the number of population is not known for sure, then the approach is used p = q = 0.5 and e is the limit of error that the researcher will use (15%). The results of the calculation of the Lemeshow method obtained a minimum sample number of 43 and this study used 50 respondents. Sampling technique to determine samples or respondents using purposive sampling techniques∝

Primary data in the study were collected from respondents using structured interview techniques or interviews with questionnaire guidelines. The list of questions in the questionnaire refers to the indicators of entrepreneurial behavior adopted from Benjamin (2018) which include:

1. Future-oriented
2. Risk-taking
3. Task and result-oriented
4. Confident
5. Innovative
6. Persistent/Hardworking

The qualitative measurement scale uses an ordinal scale with a likert scale of 1-5 (1= strongly disagree; 2= disagree; 3= neutral; 4 = agree; and 5 = strongly agree).

The data were analyzed using descriptive statistics to achieve the first research objective. The data was analyzed by calculating the total score and then categorized using the categories adopted from Widhiarso (2015) in Hasan (2020) as follows:

Low (bad) $= X < (\mu - 1.\sigma)$
Medium (pretty good) $= (\mu - 1.\sigma) \leq X \leq (\mu + 1.\sigma)$
High (good) $= \mathrm{X} > \mu + 1.\sigma)$

Information:

X = Total score obtained by respondents

$\mu =$ From the hypothetical drift,

$$\mu = \frac{1}{2}(\text{max score} + \text{min score})\text{x sum items}$$

$\sigma =$ Hypothetical standard deviation

$$\sigma = \frac{1}{6}(\text{total max score} - \text{total min score})$$

The second research objective was achieved by analyzing the data using multiple linear regression. The independent variable was chosen based on previous research, namely group membership (Mulia & Suarda, 2019); education level (Umar et al., 2019); and experience (Karabulut, 2016). The mathematical equation of multiple regression is as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3D$$

Where Y = entrepreneurial behavior (likert scale); X1 = level of Education (years); X2 = farming experience (years); D= dummy group membership (1= member and 0= non-member). Hypothesis testing uses a t-test with a tolerable error rate (α) of 5%.

RESULTS AND DISCUSSION

Respondents' Entrepreneurial Behavior

Based on the score categorization adopted from Widhiarso (2015) in (Hasan, 2020), it can be known that the distribution of respondents' entrepreneurial behavior is based on each indicator (Table 1). Some respondents (86%) have a medium category of future orientation. This indicator is measured by three questions: business development plan, search for information for business improvement, and satisfaction with crop yields. Most farmers have no plans to expand their herbal long pepper or increase the number of plants. They reasoned that the land they own is limited, capital is limited, and is related to farmers' strategies in meeting the food needs of their families. This reason is supported by the results of research by Hasan & Ihsannudin (2023) which found that a large number of farmers (64%) of long pepper farmers in Madura plant their long pepper s as hedge crops, while the middle of the land is planted with food crops such as corn, beans, and

rice in the rainy season to meet the family's food needs. Some farmers also plant grass for animal feed.

Table 1. Distribution of Respondents Based on Indicators of Entrepreneurial Behavior

Indicator	Categories		
	Bad (percentage)	**Pretty good (percentage)**	**Good (percentage)**
Future-Oriented	1 (2%)	43 (86%)	6 (12%)
Risk-Taking	13 (24%)	24(48%)	13 (26%)
Task and Result-Oriented	4(8%)	38(76%)	8 (16%)
Confident	0 (0%)	2 (4%)	48 (96%)
Innovative	28 (56%)	19 (38%)	3 (6%)
Persistent/Hardworking	2 (4%)	14 (28%)	34 (68%)

Statements related to the search for information for business improvement, such as taxonomy information, innovation, and market, are not done by many farmers. Many farmers are passive in waiting for information from a small number of other farmers, group leaders, and agricultural extension officers. In addition to the passive search for information, most farmers tend to be satisfied with the current crop yield. In fact, the average production of dried long pepper in Sumenep is only around 875 kg/ha/year (Dispertan, 2019), far below the target of the potential production of dried long pepper, which is around 2.5 tons/ha/year (Djauharia & Rosman, 2009). With this feeling of satisfaction, efforts to increase production are not much done. For example, when fertilizing does not take into account the type and dosage. According to Ruhnayat et al. (2011), the application of kandan fertilizer with a dose of 5 kg/phn/year and urea fertilizer + SP-36 + KCl (1:2:2) 75 g/phn/th urea fertilizer + SP-36 + KCl (1:2:2) or manure 15 kg/phn/year with urea fertilizer + SP-36 + KCl (2:1:2) 50 g/phn/year are the types and doses that will increase the growth of 5-year-old productive Long pepper in Sumenep

Table 1 shows that the risk-taking indicator has a low distribution of respondents is the second most (24%) after innovation (56%). This indicator is measured by 3 items of statement (courage to borrow capital, courage to postpone selling, and courage to finance

watering during the rainy season). The courage to take credit is a form of courage to take financial risks (Sethi et al., 2013). There were 68% of respondents who expressed their disapproval to borrow capital or access credit when their farming capital was low. They will run their farming with existing capital. Apart from the reason of complicated formal credit access procedures and farmers' perception of usury (*riba*) if they access non-formal credit. In addition, they are also worried if their farming is not successful so they cannot return the credit.

The number of farmers who dare to postpone selling their long pepper when the price is considered not to meet expectations is only 18%, the rest will sell when the number of dried long pepper is considered enough to be sold. That means that only 18% of respondents dare to risk prices in the future. The lack of financial reserves to meet the needs of the family causes them to sell their long pepper s even though the price is not as expected. This is almost the same as the statement of Bappebti (2011) which states that although rice farmers can get around cheap prices at harvest time by postponing the sale of crops, but at the same time they must be faced with the need for cash.

Table 1 shows the distribution of respondents for task orientation indicators and some results are categorized as bad (8%) and most are categorized as adequate (76%), meaning that 84% of respondents have not done farming well or are not in accordance with good agricultural practices (*Good Agricultural Practice/GAP)* such as the use of quality seeds, regular care, routine fertilization (the right type, amount, and time), and watering during the dry season. 82% of respondents stated that they did not use quality seeds. This is supported by the results of research by Hasan & Ihsannudin (2022b) which states that almost all farmers in Sumenep use seeds derived from their own plants or from uncertified seed sellers. The habit of farmers not using superior seeds is due to the reason of high prices and limited availability of superior seeds. According to Ulma (2017), superior seeds are important because they tend to produce quality and high productivity products

Long pepper is a plant that does not tolerate waterlogging but needs water, especially during the dry season. During the dry season, there are 44% of respondents who do not water their plants. This causes a risk of the plant withering or even dying. The reason farmers do not water is because it is difficult to find a water source in Bluto and even if

there is a water source, it is usually in a deep well or far from the location of the long pepper plant, so it requires more energy and cost to get water to water the long pepper.

Table 1 shows that most of the respondents (96%) have good confidence. According to Shaheen & AL-Haddad, (2018), high self-confidence can be boosted by high self-efficacy (one of which is shown by long experience). Farmers in Bluto District have long experience in cultivating long pepper because the existence of long pepper in Madura has existed since ancient times (Sudarmaji et al., 2019). The respondents had experience ranging from 10-40 years.

Table 1 shows that the innovation ability of the respondent farmers is not good (56%), both in cultivation, product processing, and marketing techniques. Being innovative is an important quality for a farmer-entrepreneur, especially when his business faces stiff competition or operates in a rapidly changing environment (Kahan, 2012). According to Sullivan (2017), good agricultural entrepreneurs must be actively involved in farming, use current technology to increase agricultural productivity, and adopt new operating systems.

The farmer of long pepper in Bluto District have good innovation capabilities, they have a different way from other farmers in terms of watering, for example those who use reservoirs and irrigation systems using hoses. In addition to the continuous availability of water, watering with pipes does not waste water. Another form of innovation is when selling herbal long pepper s not in the form of dried long pepper s as many farmers do, but by processing them into derivative products. They innovated by processing long pepper into a coffee mixture so that it was sold in the form of long pepper.

Table 1 shows that most of the respondents (68%) have shown persistent behavior in cultivating long pepper Farmers continue to take care of their long pepper when prices drop and continue to take care of their long pepper during the dry season, although the intensity of care varies between farmers. No farmers were found who planned to cut down or kill their long pepper.

The Influence of Education, Experience, and Farmer Group Membership on Entrepreneurial Behavior

The variables of education, experience, and group membership have been able to explain the influence on farmers' entrepreneurial behavior by 36.2% (*Adjusted R-Square*) as shown in table 2. Other variables that are suspected to affect farmers' entrepreneurial behavior include access to information and access to resources (Mair, 2002), access to credit (Asmoro et al., 2022; Kisaka, 2014), family support and government support (Marliati, 2020) (Marliati, 2020), environmental factors (Akter & Iqbal, 2022), and financial support (Dharmanegara et al., 2022).

Table 2. **Multiple Linear Regression Analysis Results**

Variables	Coefficient	t-Significance
Education	0,388	0,105
Farming Experience	0,252	0,005
Farmer Group Membership	4,374	0,007
Constant	57.505	
Adjusted R-Square	0,362	
F-sig	0,000	

Remarks: independent variable = entrepreneurial behavior

Table 2 shows that the level of education has no significant effect on farmers' entrepreneurial behavior. This is contrary to the statement that education is an important factor in determining the intention to start one's own business (Brownson, 2014), but the results of this study support the research of Shaheen et al. (2023) and Sancho et al. (2022) also found that the factor of education level does not have a significant effect on entrepreneurial behavior. This does not mean that education is not an unimportant thing in entrepreneurship development, but the level of education should not be used as the main criterion for selecting participants in entrepreneurship development programs.

The education used as a variable in this study is the level of formal education whose curriculum is general (not focusing on the entrepreneurship curriculum), in contrast to formal and non-formal education which focuses on entrepreneurship education. In particular, the main goal of most entrepreneurship training or education programs is to create awareness of entrepreneurial activities or the necessary entrepreneurial knowledge and skills. Most previous researchers concluded that entrepreneurship education has a

significant effect on entrepreneurial behavior, such as the results of the research of Akter & Iqbal (2022); Rauch & Hulsink (2015), and (Adeel et al., 2023).

Table 2 shows that farming experience has a positive effect on farmers' entrepreneurial behavior. According to (Shaheen & AL-Haddad, 2018), experience is one of the dimensions of *self-efficacy* that has a positive effect on entrepreneurial behavior. With high self-efficacy (one of which is shown by long experience) will foster entrepreneurial behavior, especially in the dimension of self-confidence. The longer the experience, in general, the skills and abilities of farmers become better so that they are more confident in farming. The experience of farmers in Bluto District in growing long pepper ranges from 10-40 years.

Table 2 shows that group membership has a positive effect on farmers' entrepreneurial behavior. These results can be interpreted that farmer groups have a significant role in fostering farmer entrepreneurial behavior. With the participation and activeness of farmers in farmer groups, they will get benefits that support their farming behavior, including:

1) Increasing knowledge and skills that focus on farming by farmer group members, is different from education where the knowledge and skills provided are general. This is in line with Shaheen & AL-Haddad (2018) who stated that among the determinants of entrepreneurial behavior are skills and knowledge. This opinion reinforces the opinion of Kirkley (2016) who stated that entrepreneurial behavior cannot occur without the necessary knowledge, skills, and experience Farmer groups in Burneh District often hold training and counseling to their group members on various aspects of agriculture, such as cultivation techniques, marketing, and farming management facilitated by local extension officers.
2) Increasing access to information and resources, farmer groups can help farmers access the information and resources they need, such as information on commodity prices, agricultural technology, and financial assistance. This is in line with the results of Mair's (2002) research which proves that access to information and access to resources will foster entrepreneurial behavior in a positive direction.
3) Increased cooperation and collaboration. Farmer groups can be a forum for farmers to work together and collaborate in various activities, such as marketing, processing

agricultural products, and farming development. The findings of the research of Abeyrathne & Jayawardena (2014) show that group interaction will have a positive impact on the entrepreneurial behavior of farmers in farmer groups. Respondent farmers who are members of farmer groups often exchange information, exchange information about markets and prices, and problems and solutions in the cultivation of long pepper. Several farmer groups have also worked together to establish a unit for processing long pepper into herbal coffee.

CONCLUSION AND RECOMMENDATION

Most farmers have entrepreneurial behavior that is categorized as good enough for four indicators: future orientation, risk-taking, task and result orientation, and innovative. As for the other two indicators: confidence and persistence, most farmers behave well. Factors that affect the entrepreneurship of farmers are farming experience and participation in farmer group members.

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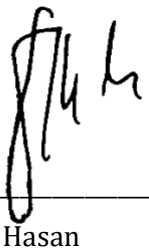

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