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Factors affecting entrepreneurial intentions among beef cattle farmers in Boyolali Regency, Central Java, Indonesia

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Abstract. This research aimed to analyze the influence of entrepreneurial competence towards entrepreneurial intention among beef cattle farmers. The research was conducted in Nogosari Subdistrict, Boyolali Regency, Central Java. Data were collected through questionnaires obtained from 60 farmers of the member of Farmers group ASPIN who attended entrepreneurship training. Data analysis used was test of validity and reliability, multiple linear regression analysis, continued with test of determination (R^2), F test, t test and classical assumption test. Validity test results show valid results with $r_{count} > r_{table}$ is 0.304 and reliability value $\alpha > 0.6$ on all variables. Multiple linear regression analysis obtained value of equation $Y = 0.841 + 0.370X_1 + 0.346X_2 + 0.284X_3 + 0.067X_4 + 0.031X_5 + 0.048X_6$. The value of determination coefficient (R^2) is 0.678, which means that entrepreneurial competence variable can explain the entrepreneurial intention variable equal to 67.8%. The entrepreneurial competence variable affects together toward the intention with the value $F_{count} > F_{table}$. It can be concluded that entrepreneurial competence consisting of communication, problem solving, initiative, innovation, self-awareness and technology competence together influence to entrepreneurial intention.

1. Introduction

The number of unemployed and poverty in Indonesia can actually be minimized with the courage to open new businesses or entrepreneurship. Entrepreneurs are people who are innovative, initiative, risk-taking and profit-oriented [1]. According to Central Statistics Agency [2] the number of entrepreneurs in Indonesia amounted to 20.01 million people and entrepreneurs in agriculture as much as 5.49 million people from 118.17 million people of Indonesia who work, this is very less compared to neighboring countries such as Malaysia and Singapore. Indonesia itself has a population of 255.46 million [2], so the potential to create entrepreneurship is even greater. Indonesia needs more new entrepreneurs to support Indonesia as a developed country, while opening jobs as a solution to unemployment and poverty.

The livestock subsector, especially beef cattle farming has good prospects to develop. The growth of new entrepreneurs and the development of an entrepreneurial spirit for farmers are very important to be done, in order to be able to survive in their business. The beef cattle business is a profitable business, this is related to the increase in domestic meat demand every year. Meat demand is still high at 674,000 tons, with 440,000 tons met domestically and the rest imported so that beef cattle business opportunities are still wide open in the country [1].

Boyolali Regency has extensive agricultural land and the availability of feed ingredients for livestock is fulfilled. The area is suitable as agricultural land or livestock. Based on data from the Central Bureau of Statistics, the policy pattern of beef cattle development in Indonesia is still oriented to the pattern of smallholder livestock farming. Most beef cattle businesses are hereditary businesses with a pattern of maintenance in accordance with the ability of farmers [3]. The development of beef cattle farming business which is still on the pattern of traditional or smallholder livestock has resulted in the absence of entrepreneurial competencies in the community.

Competence is the attitude, knowledge, skills and abilities needed by farmers to maximize their business performance [4] while intention is the tendency of farmers to innovate, proactively and dare to take risks in managing their business [5]. Entrepreneurial competence can contribute more to the company's performance, from the characteristics of the company [4]. Entrepreneurial competence plays an influential role in the organization's ability and competitive scope, and also has a direct influence on company performance [6]. Entrepreneurial competence showed that someone have enough combination of knowledge, abilities, skills and personality sufficient to run and develop their business [4].

In the context of entrepreneurship, intension is identified as the important property for establishing an organization and as a predictor of new reliable enterprise [7]. The approaches of entrepreneurial intention studies focus on personal characteristics (risk-taking, propensity, tolerance for ambiguity, internal locus of control, innovativeness and independence) [8]. Personal attitude, perceived behavioral control and perceived relational support are found to have a significant impact on entrepreneurial intention [9]. This study aims to analyze the influence and relationship aspects of entrepreneurial competence on entrepreneurial intention of beef cattle in Boyolali Regency, Central Java.

2. Methodology

This research was conducted in 2017 at Boyolali Regency, Central Java, Indonesia. This study used a survey method for beef cattle farmers who are members of the Indonesian Cattle Breeders Association (ASPIN) in Nogosari District, Boyolali District. According to [10] the survey method was a research method that takes samples from a population using a questionnaire as the main data collection tool. The location of the study was done intentionally (*purposive*), the chosen research location was Nogosari District. Sampling used a census method for all cattle farmers of ASPIN members who attended training with 60 people.

Data analysis used quantitative descriptive method of data obtained from filling out questionnaires by respondents. The analysis of this study included testing instruments by testing validity and reliability. Validity test was used to measure the level of validity of a question instrument. Validity test criteria if the value $r_{count} > r_{table}$, then the statement item is said to be valid [11]. A questionnaire is reliable or reliable if a person's answer to a question is consistent or stable over time [12]. Reliability testing used the *Cronbach's alpha* method, a reliable instrument if the value of $\alpha > 0.6$ [13].

Multiple linear regression analysis was used to determine the effect of communication variables, problem solving, initiatives, planning and organization, self-awareness and technology on entrepreneurial intention. Statistical tests include the F test to determine the effect of independent variables together on the dependent variable $(\alpha) = 5\%$, t test to find out the independent variables individually affect the dependent variable with the value $t_{count} > t_{table}$ which means influence, coefficient of determination (R^2) is used to find out how much variation in the dependent variable Y can be explained by the independent variable X [14]. Correlation test using *Pearson* correlation, correlation test was conducted to determine the relationship between variables of communication, problem solving, initiative, planning and organization, self -awareness and technology towards intention. Multicollinearity classic assumption test was used to see whether there is a correlation between independent variables, the tools used in this test with *Variance Inflation Factor* (VIF) and *torelance*. Heteroscedasticity test to see whether there is variance inequality from residual one to other observations, in this study heteroscedasticity test used Gledjar test. Autocorrelation test to see

whether there is a correlation between a period t with the previous period, the assumption of autocorrelation using *Durbin Watson* (d *test*).

3. Results and discussions

3.1. Characteristics of respondents

Characteristics of respondents analyzed in this study include gender, age, level of education, employment, length of livestock and income. Characteristics of respondents in entrepreneurship training participants can be seen in Table 1.

Table 1. Characteristics of respondents

Characteristics	Number of People	Percentage (%)
Age		
25-35	14	23.33
36-45	15	25.00
46-55	12	20.00
56-65	14	23.33
> 65	5	8.33
Level of education		
Elementary school	8	13.33
Middle school	10	16.67
High school	31	51.67
Bachelor	11	18.33
Main Job		
Labor	4	6.67
Farmer	24	40.00
Private	5	8.33
entrepreneur	16	26.67
Public employee	11	18.33
Farming experience		
<5	31	51.67
5-10	20	33.33
> 10	9	15.00
Number of livestock ownership		
<5	37	61.67
5-10	17	28.33
> 10	6	10.00

Source**:** Processed Primary Data, 2017

Based on Table 1, the respondents in the study were mostly 15-64 years old as many as 40 people with a percentage of 91.7%. This showed that the majority of beef cattle farmers in Nogosari District are classified as productive age, so that knowledge and skills can be improved by providing new innovations in the field of animal husbandry. The productive age also influences the decision making of farmers towards the beef cattle business that is run. The age of 15-65 years, a person is in the productive age category where the ability to work well and the ability to think is still good [15].

The highest level of education of respondents is the high school education level of 24 people with a percentage of 51.67%. Education will affect a person's mind set and attitude, especially in making decisions and managing a business. Education makes it easier to accept and decide on an innovation in developing a business to be better, so that farmers can receive the development of knowledge and technology in beef cattle business. The higher a person's education, the higher the level of productivity or workforce performance [16].

The majority of the main job of beef cattle fattening business respondents was farmers, which is as many as 19 people with a percentage of 40%. The main job of the respondent as a farmer, raising

livestock is a side job with the goal of raising livestock can be used as savings and increase the social status of respondents. To deal with business risks such as production failure, farmers undertake part-time business as a source of income to meet household needs [17].

Most respondents of beef cattle business have experience of breeding less than 5 years, consisted of 31 people with a percentage of 51,67%. Farming experience is very important, because it is one of the factors that support success in beef cattle business. The longer the experience of farming, the more knowledge and skills will be developed in the business and able to overcome the problems faced in the business [18].

The highest level of livestock ownership of respondents who took part in entrepreneurship training was 37 people with a total of <5 individuals with a percentage of 61.67%. Training participants are smallholder farmers with a small business scale and are side businesses. Fattening business is used as a livestock savings account which can be sold at any time if needed. The scale of the people's beef cattle breeding business is illustrated by the number of small livestock holdings [19]. This means that livestock owned by a farmer is only 2-3 birds.

3.2. Testing of research instruments (validity test and reliability test)
Validity test criteria if the value $r_{count} > r_{table}$, then the statement item is said to be valid (Abdulrahman *et al*., 2010). Test the validity of each item shows that the calculated r value > 0.304 ($r_{count} > r_{table}$) can be concluded that the statement item has been valid. The *Cronbach's alpha value* of all variables has the lowest value of 0.711 and the highest value of 0.872 so that all variables are said to be reliable. If ($\alpha > 0.6$) the statement item is reliable [13].

3.3. Analysis of factors affecting entrepreneurial intention
Factors that influence entrepreneurial intention can be measured by multiple linear regression tests. The results of multiple linear regression test can be seen in Table 2.

Table 2. Results of multiple linear regression test

Variable	Regression Coefficient	t count	t table	Sig.t $\alpha = 0.05$
X1 (Communication)	0.350	1.526	2,030	0.136
X2 (Problem solving)	0.246	1.071	2,030	0.292
X3 (Initiative)	0.264	1.458	2,030	0.154
X4 (Planning and organization)	0.047	0.195	2,030	0.847
X5 (self-awareness)	0.011	0.073	2,030	0.942
X6 (Technology)	0.038	0.224	2,030	0.824
Constants	0.741			
F count	9.064			0.000
R square (R ^{2})	0.678			
Dependent variable = Y (Entrepreneurial Intention)				

Source**:** Processed Primary Data, 2017

Based on Table 2, the multiple linear regression equation is obtained as follows:

$Y = 0.741 + 0.350X_1 + 0.246X_2 + 0.264X_3 + 0.047X_4 + 0.011X_5 + 0.038X_6 + e$.

Based on these equations the regression equation constant is positive at 0.741. This value means that if the independent variable is zero, then the entrepreneurial intention has a value of 0.741. Value of determination R^2 of 0.678 which means the percentage contribution of the influence of independent variables on the dependent variable was 67.8% and 33.2% influenced by other variables not included in this research model.

F test was used to determine the level of influence of independent variables that are used together to the dependent variable [12]. The results of F test show the calculated F value 9.064 with 0.000 significance. The level of significance of 5% with df 1 (number of variables-1) = 6 and df 2 (nk-1) =

35 then obtained the F_{table} value of 2,372. The data shows 9.064 F_{count} > 2.337, it is said that the regression coefficients are simultaneously significant at the 5% level. Based on these results it can be concluded that competence influences together on entrepreneurial intention.

Based on the results of Table 2, it is known that communication, problem solving, initiative, planning and organization, self-awareness and technology partially (individuals) have no effect on entrepreneurial intention. T-table values with df 35 and using two-sided testing (significance = 0.025) obtained 2.030 results. This shows that communication, problem solving, initiative, planning and organization, self-awareness and technology of beef cattle business do not affect entrepreneurial intention.

Communication of 0.136 t-table value with df 35 at 95% confidence level is 2.030, this indicates that communication does not affect individually on entrepreneurial intention. This training participant thought communication in beef cattle fattening business did not affect entrepreneurial intention. Training participants are lacking in terms of communication and socialization, if there is a problem in the business it is not discussed with other farmers. Communication plays a role in creating harmonious relationships. High communication intensity was expected to be able to establish harmonious relationships in the business environment [19]. Communication is the process of delivering a statement that is shown to obtain information. Communication intensity will affect farmers to adopt in their business.

Problem solving is 0.292 t-table value with df 35 at 95% confidence level is 2.030, this indicates that problem solving does not affect individually on entrepreneurial intention. This training participant thought that solving problems in beef cattle fattening business did not affect entrepreneurial intention. Entrepreneurship is a person who is innovative, initiative and risk-taking and profit oriented [20]. Training participants are suspected of being less controlling the beef cattle business and have limitations in capital management, maintenance and health management. So that breeders do not dare to take risks if the fattening business of beef cattle has problems. Problems faced are borne alone without asking for help from others and also looking for solutions to solutions. Understanding management procedures is very important for farmers especially in problem solving. Farmers as managers must truly master the problems that arise in their business [21].

The initiative of 0.154 t-table values with df 35 at 95% confidence level is 2.030, this indicates that the initiative does not affect individuals on entrepreneurial intention. This training participant thought the initiative in beef cattle fattening business did not affect the entrepreneurial intention. It is suspected that training participants are not very active in beef cattle fattening efforts, such as finding information, expressing ideas in the organization and lack of business management skills so that initiatives in managing the business are lacking. Initiative is the ability of a person to complete their work in its own way which is considered capable and effective efficient and can create new changes [22].

Planning and organization of 0.847 t-table value with df 35 at 95% confidence level is 2.030, this indicates that planning and organization do not affect individually on entrepreneurial intention. This training participant thought that planning and organization in beef cattle fattening efforts did not affect entrepreneurial intention. Training participants were smallholder farmers with a small number of livestock, so they are less in planning their business progress. The existence of organizations such as ASPIN should be used by farmers to share information and prepare business plans and training in the field of animal husbandry is expected to increase the knowledge and skills of farmers. Cattle farming aims to generate profits, then in order to get profits as expected, planning must be made with careful consideration [23].

Self-awareness of 0.942 t-table with df 35 at 95% confidence level is 2.030, this indicates that self-awareness does not affect individually on entrepreneurial intention. This training participant thought self-awareness in fattening beef cattle did not affect entrepreneurial intention. It is suspected that trainees were less skilled and mastered in managing human resources to overcome change and are less able to identify a situation that will affect their business. Small business scales make smallholder competition less challenging in business and less motivated that the business will be

successful. Awareness is the attitude of someone who voluntarily obeys all regulations and is aware of their duties and responsibilities [24].

Technology of 0.824 t-table value with df 35 at 95% confidence level is 2.030, this indicates that technology does not affect individuals on entrepreneurial intention. This training participant assumes that technology in beef cattle fattening business does not affect entrepreneurial intention. This is presumably because training participants are community farmers and still use traditional methods of maintenance. The level of complexity and ease of technology will affect farmers to use a technology. The technology to find business information through cell phones, reproductive technology through artificial insemination, waste management technology and breeders' feed management find it difficult to use and implement it. Technology must provide concrete benefits to increase technology adoption [25].

3.4. Classic assumption test

Classical assumption test in this study include multicollinearity test, heteroscedasticity test and autocorrelation test. Multicollinearity test can be seen from the value of *tolerance* or the value of *Variance Inflation Factor* (VIF). The *tolerance* value limit is not less than 0.1 and the VIF value is not more than 10, it can be concluded that the model used is free of multicollinearity between independent variables in regression [26]. The results show the tolerance value of all independent variables has a tolerance value > 0.1 and VIF value is less than 10. This result can be concluded that there is no multicollinearity between independent in the regression model.

According to [12], to test autocorrelation can use the *Durbin Watson* statistical test (dw *test*) using SPSS. Decision making of autocorrelation in the *Durbin Watson* test is du <dw <4-du, where the du value is obtained from the *Durbin Watson* statistical table. The value of dw will be compared to the value of the table with a significance value of 5%. The number of samples is 42 and the number of variables 6, the value of the table dw is 1.202 and du 1.845. Test results obtained by *Durbin Watson* have a value of 2,050. The test results show that du <dw <4-du, where 1.845 <2.050 <2.155. It can be concluded that autocorrelation does not occur.

The heteroscedasticity test in this study uses the Glejser test, which is to absolute residual regression with each independent variable. The results of the Glejser test on the significance value will be compared with a value of 0.05, if the significance value is> 0.05, then heteroscedasticity is free. The results of the significance of all variables have a value greater than 0.05. It can be concluded that there is no heteroscedasticity in the regression model.

4. Conclusion
Based on the research that has been done, it can be concluded that the aspects of entrepreneurial competence which consists of communication, problem solving, initiative, planning and organization, self-awareness and technology have a joint influence to entrepreneurial intention among beef cattle farmers in Boyolali Regency. Central Java, Indonesia.

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