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Analysis of Factors Affecting Coffee Farmer Behavior in Tanah Datar District

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Abstract

This study aims to analyze the factors that influence the behavior of coffee farmers in Tanah Datar District. This study uses a survey method in gathering data from the population of farmers who produce coffee with a sample of 100 farmers. The analytical tool used is Partial Least Square (PLS). The results showed knowledge and attitudes significantly influence the behavior of coffee farmers and have a positive connection. Meanwhile, knowledge and attitudes are significantly influenced by individual and environmental characteristics, and coherence with a positive relationship. Individual characteristics significantly influence the behavior of coffee farmers with knowledge and attitude as a mediating variable and have a positive relationship. The environment has a significant effect on the behavior of coffee farmers with knowledge and attitude as a mediating variable and has a positive relationship.

1. Introduction

Agriculture is one sector that contributes to Indonesia's trade. There are several sub-sectors which cover the agricultural sector, namely the subsector of food crops, fisheries, horticulture, plantations, and forestry [1].Directorate General of Forestry in 2012 said that one of Indonesia's leading plantation commodities, especially for exports, was coffee.

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Coffee has an important role.The majority of coffee farmers depend on coffee as their main source of income [1]. Based on the area of coffee plantations in Indonesia, 96.10% is cultivated by the people (PR) while the rest is cultivated by large privately-owned plantations (PBS) by 2.07% and state-owned large estates (PBN) by 1.83% [2]. The low quality of coffee is mainly caused by inadequate management of the plantation, harvesting, and postharvest handling. Besides, the coffee market still absorbs all coffee products and has not provided adequate price incentives for good quality coffee [3]. Novita also added that one of the factors affecting coffee quality was post-harvest handling. To obtain high-quality coffee, proper handling of harvests and postharvest is required based on good agriculture practice (GAP) [4]. Mahyuda, based on his research, said that the application of GAP for farmers has an effect on improving coffee production and quality [5].The concept of Good Agriculture Practice (GAP) is relatively new and not yet widely known by farmers, coupled with the principles of the concept allegedly often conflicting or not in line with what farmers have done so far. This makes farmers not apply the concept. Thus, although the level of knowledge possessed by farmers is quite high, they tend not to implement it [6]. According to Kurt Lewin the behavior is a function of the interaction between an individual and his environment [10]. Kurt Lewin behavior model which says that behavior (B) is a function of individual characteristics (P), and environment (E), denoted as B = f (P, E) [11,12]. Therefore, the behavior of an individual with another will differ according to their respective environments [11]. Behavior as formed by internal (individual) and external (environmental) influences. Behavior is also determined by conscious cognitive selection (knowledge) of various behavioral alternatives that are adjusted to their perception of the external situation. The results found from his research are reinforcing Kurt Lewin's theory which says that human behavior is the result of individuals interaction with their environment [10]. Based on a preliminary survey, Tanah Datar District is one of the coffee producers in West Sumatra and coffee is one of the leading commodities of plantation crops in Tanah Datar District [7]. Coffee farmers in Tanah Datar Regency pay little attention to the quality of the coffee produced. The behaviors of coffee farmers include: (1) Harvesting coffee by completing the picking of the whole coffee tree. Harvesting in this way causes the harvested coffee fruitwill not be selected, so that the coffee does not have uniformity in quality, (2) Farmers do not select the ideal harvested coffee fruit (red) to be harvested, (3) Farmers sell dried coffee fruit or coffee beans to local traders, coffee processors or marketers, (4) There are farmers who harvest coffee fruit in not yet ideal condition for harvesting (green fruit), (5) Farmers process coffee fruit into coffee beans by manually pounding the coffee fruit. The behavior of the farmer is thought to be related to the characteristics and environment that influence it. It is therefore interesting to examine empirically the factors that influence the behavior of these coffee farmers.

Objective

This study aims to analyze the factors that influence the behavior of coffee farmers in Tanah Datar District

2. Research Metodology

2.1 Time of Study

This research was conducted in Tanah Datar District. Determination of the location in Tanah Datar District is done purposively with the consideration that Tanah Datar District is one of the coffee-producing areas in West

Sumatra and has the most coffee processing SMEs in West Sumatra, so it has the opportunity for coffee agribusiness development. The study was conducted for one month from 1 June to 1 July 2019

2.2 Method of data collection

The data collected in this study consists of two types of data, namely primary data and secondary data that are consistent with the purpose of the study.

2.3 Research methods

This research was conducted with a descriptive approach. A descriptive approach is an approach in examining the status of human groups, an object, a set of conditions, a system of thought, a class of events in the present. This approach aims to make a systematic, factual, accurate description of a picture or picture of the facts, properties and relationships between the phenomena investigated [8]. The descriptive approach used in this research is surveymethod. The survey method is an investigation conducted to obtain facts from the phenomena that exist and searchthe information factually, as well as social, economic, or political institutions of a group or an area. The survey method dissects, skins, recognizes problems and obtains justification for the circumstances and practices that are taking place [8]. This study analyzes the factors that influence the behavior of coffee farmers in Tanah Datar District by conducting a survey of coffee farmers who produce coffee to obtain facts and information in real accordance with field conditions. Factor data analysis methods that influence coffee farmers' behavior, observed variables or manifest variables in the research questionnaire were measured using a Likert scale. A distinctive feature of the Likert scale is that the higher the score obtained, the assessment of an object is more positive, and vice versa. Furthermore, the data is processed by the Partial Least Square (PLS) analysis method.

3. Results and discussion

3.1 Condition of Coffee Farming in Tanah Datar District

Based on research results, coffee farming is a side job for farmers with the main job as a rice farmer. The coffee garden which is managed by farmers is a hereditary crop, where coffee trees are already available to farmers who are a legacy from their previous family. The processing method used by coffee farmers to produce coffee beans is dry processing by drying the coffee fruit in the sun. Dried coffee fruit is processed to get coffee beans manually using a mortar and a machine. The percentage of farmers who use machines to process dried coffee fruit into coffee beans is 57% and 53% manually. Farmers' coffee generally sold to collectors at prices at the farm level ranging from Rp22,000 - Rp28,000/kg

3.2 Analysis of Factors Affecting the Behavior of Coffee Farmers in Tanah Datar District

1. Path Diagram

A diagram is one of the techniques to illustrate concepts built using several measurable indicators. The path

diagram in this study was conducted on 5 latent variables.Each latent variable has an indicator namely individual characteristics (X1) measured using 7 indicators (X1a = Age, X1b = Gender, X1c = Education, X1d = Experience, X1e = Perseverance , X1f = Persistence, X1g = Willingness to succeed,), environment (X2) as measured using 9 indicators (X2a = Finance, X2b = Operations, X2c = Marketing, X2d = Government policy, X2e = social, cultural, economic aspects , X2f = Aspects of the role of related institutions, X2 g = Business Network, X2h = Market, X2i = Information Access), knowledge based on GAP (X3) measured using 6 indicators (X3a = Knowledge of land clearing, X3b = Planting knowledge, X3c = Knowledge of superior seeds used, X3d = maintenance knowledge, X3e = harvesting knowledge, X3f = postharvest knowledge), attitudes towards GAP (X4) measured using 6 indicators (X4a = attitude towards land clearing provisions, X4b = Attitude on planting conditions, X4c = attitude towards the provision of superior seedlings, X4d = attitude towards maintenance provisions, X4e = attitude towards harvesting provisions, X4f = attitude towards postharvest provisions), behavior based on GAP (Y) measured using 6 indicators (X5a = Land clearing act, X5b = planting action, X5c = act of using superior seeds, X5d = maintenance action, X5e = harvesting action, X5f = postharvest action). This analysis was conducted to examine the relationship between individual characteristics (X1), environment (X2), knowledge-based on GAP (X3), attitudes towards GAP (X4) on behavior based on GAP (Y). The path diagram in this study is presented in Figure 1. The relationship between variables in the factor model that affects the behavior of farmers is analyzed and tested for validity and reliability by the Partial Least Square (PLS) method. After all the data has been processed, an evaluation of the research model is carried out, including evaluating the measurement model (outer model) and evaluating the structural model (inner model).

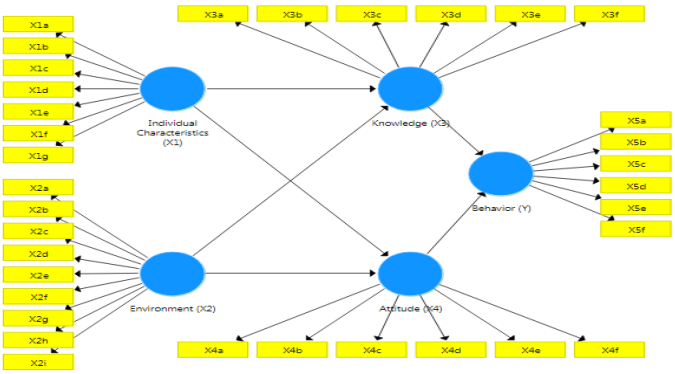

Figure 1: Research Path Diagram

2. Observable Variable Validity and Reliability

Before measurements are made, it is necessary to test the feasibility of the data by measuring the validity and reliability of the observed variables. According to Hulland (1999), a good measurement model must meet three criteria, namely reliability, convergent validity, and discriminant validity. Reliability and validity have similarities and close relationships. In classical theory, the two have fundamental differences. Reliability is usually estimated from one construct/latent variable because it emphasizes consistency or stability while validity often involves more than one construct or latent variable [9]. The results of the validity and reliability tests are

explained as follows:

a. Convergent Validity Test

Convergent validity is indicated by the correlation between the indicator and the latent variable. Evidence of convergent validity can be achieved in two ways, namely through the achievement of criteria and model comparison tests. In this study, convergent validity is proven through the achievement of criteria. Hair and his colleagues (2010) and Koo and his colleagues (2009) state that in the SEM / PLS approach, measurements meet convergent validity if they meet the requirements of having a minimum reliability indicator of 0.5 [9]. In Convergent Validity, the average variance extracted (AVE) value must be greater than 0.5 (Widarjono, 2015). Furthermore, the results of initial phase factor analysis are presented in Figure 2. These results indicate that there are indicators that have poor convergent validity. Thus, invalid indicators in measuring each latent variable are discarded.

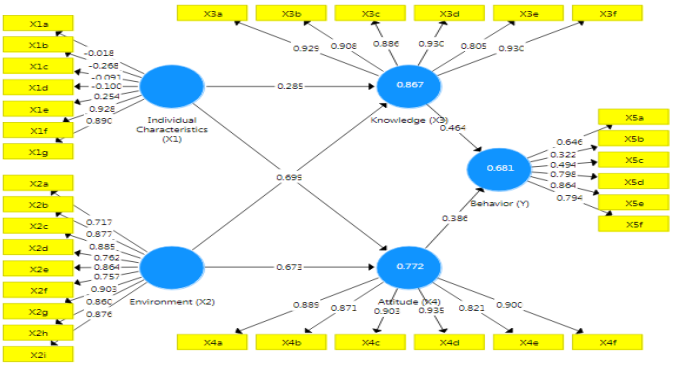

Figure 2: Results of confirmatory-first factor analysis

The loading factor from the final stage is explained in Figure 3.It can be seen that all indicators have a loading factor greater than 0.5. Later on, these results indicate that all indicators have good convergent validity. Thus, the indicator is valid in measuring each latent variable

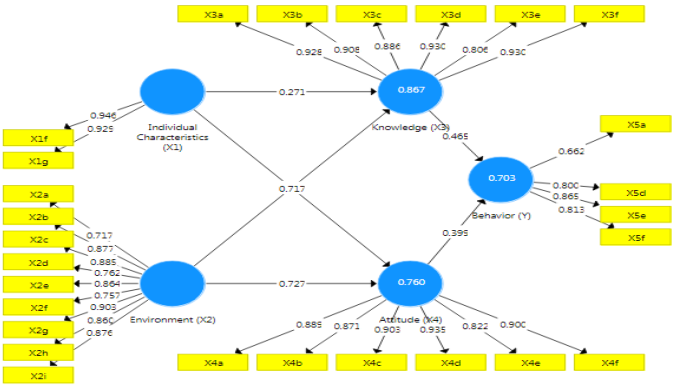

Figure 3: Results of confirmatory-last factor analysis

Table 2: AVE Value Table

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Attitude (X4)	0.946	0.950	0.957	0.787
Behavior (Y)	0.796	0.823	0.867	0.622
Environment (X2)	0.945	0.950	0.954	0.699
Individual Characteristics (X1)	0.863	0.873	0.935	0.879
Knowledge (X3)	0.952	0.957	0.962	0.809

Table 2 shows that the AVE value of all latent variables ranged from 0.622 to 0.879 meaning that the AVE value of all variables was greater than 0.5. These results indicate that all latent variables used in this study have good validity

b. Discriminant Validity Test

The second stage is the discriminant validity test conducted to find out how far the difference in the validity of a variable when compared with other variables. One way to measure discriminant validity is to compare the correlation value of the indicator with its latent variable through the cross-loading output. Cross-loading indicator variables must be of greater value to other latent variables (Widarjono, 2015). Discriminant validity in this study is seen from the correlation value between variables as described and the cross-loading value as shown in Table 3.

Table 3: Cross Loading of Indicators of Each Variable

	Attitude (X4)	Behavior (Y)	Environment (X2)	Individual Characteristics (X1)	Knowledge (X3)
X1f	0.726	0.739	0.690	0.946	0.762
X1g	0.597	0.689	0.653	0.929	0.708
X2a	0.641	0.731	0.717	0.718	0.746
X2b	0.738	0.636	0.877	0.690	0.819
X2c	0.798	0.728	0.885	0.705	0.831
X2d	0.620	0.407	0.762	0.346	0.598
X2e	0.791	0.748	0.864	0.692	0.843
X2f	0.599	0.360	0.757	0.385	0.613
X2g	0.779	0.624	0.903	0.616	0.828
X2h	0.751	0.608	0.860	0.579	0.770
X2i	0.726	0.576	0.876	0.583	0.754
X3a	0.816	0.790	0.841	0.743	0.928
X3b	0.857	0.793	0.825	0.751	0.908
X3c	0.760	0.668	0.795	0.696	0.886
X3d	0.799	0.727	0.859	0.696	0.930
X3e	0.729	0.590	0.743	0.571	0.806
X3f	0.809	0.818	0.850	0.763	0.930
X4a	0.889	0.716	0.815	0.669	0.841
X4b	0.871	0.657	0.731	0.613	0.746
X4c	0.903	0.709	0.751	0.658	0.794
X4d	0.935	0.764	0.827	0.643	0.818
X4e	0.822	0.605	0.684	0.481	0.679
X4f	0.900	0.836	0.770	0.692	0.819
X5a	0.433	0.662	0.320	0.532	0.482
X5d	0.654	0.800	0.556	0.569	0.666
X5e	0.756	0.865	0.717	0.697	0.768
X5f	0.661	0.813	0.640	0.599	0.623

Based on the above table, it is known that the cross-loading value between the latent variable and the indicator is greater than the correlation value cross-loading of another latent variable with the indicator variable. The cross-loading value of the individual characteristic variable (X1) with persistence indicator (X1f) valued 0.946 is greater than the correlation value with the environmental variable (X2) valued 0.690, greater than the correlation value with the knowledge variable (X3) valued 0.762, greater than the value of the correlation with the attitude variable (X4) valued 0.726, greater than the value of the correlation with behavior variable (Y) valued 0.739.It means that the variables in this study have good discriminant validity.

Based on the results of the overall evaluation, namely convergent validity, composite reliability, and discriminant validity explained above, it can be concluded that the indicators as a measurement of latent variables are valid measurements

3.Model Suitability Test (Goodness of Fit)

The model suitability test is based on established criteria called Goodness of Fit. The goodness of Fit from Inner Model is measured using R-square dependent latent variables with the same interpretation as regression; Q-Square predictive relevance for structural models, measuring how well the value of observations produced by the model and also the estimated parameters. Q-square value> 0 indicates the model has predictive relevance; conversely, if the Q-Square value ≤ 0 indicates the model lacks predictive relevance. The Q-Square calculation is done by the formula :

$$Q^2 = 1 - (1 - R_1^2) (1 - R_2^2) ,,, (1- R_p^2)$$

Whereas R_1^2 , R_2^2 ,,, R_p^2 is the R-square endogenous variable in the equation model, The quantity Q^2 has a value with a range of $0 < Q^2 < 1$, the closer to 1 means the better the model. The quantity of Q^2 is equivalent to the coefficient of total determination in the path analysis. The value of R^2 is presented in Table 4.

Table 4: R Square values

	R Square	R Square Adjusted
Attitude (X4)	0.760	0.755
Behavior (Y)	0.703	0.697
Knowledge (X3)	0.867	0.864

R-square value is the result (in the form of a percentage) of the representation of the independent variable on the dependent variable. A good R^2 value is above 0.2 (equivalent to 20%). Based on the R^2 values listed in Table 4, it can be explained that:

1. Knowledge variables can be explained by individual characteristics and environmental variables by 86,7 %, the rests are explained by other variables not examined.

2. Attitude variables can be explained by individual and environmental characteristics variables of 76 %,

the rests are explained by other variables not examined.

3. Behavioral variables can be explained by the knowledge and attitude variables of 70,3 % the rest are explained by other variables not examined.

Q-Square calculation is done by the formula:

$Q^2 = 1 – (1 – R_1^2) (1 – R_2^2) ,,, (1- R_p^2)$

$Q^2 = 1 – (1 – 0,867^2) (1 – 0,760^2) (1- 0,703^2) = 0, 946949318693978$

Q-square values> 0 indicate the model has predictive relevance; where the value of 0, 946949318693978 is getting closer to 1, meaning the model is getting better.

4. Pathway Coefficient Model Hypothesis Test

Hypothesis testing is intended to test the effect of exogenous variables on endogenous variables or the effect of endogenous variables on other endogenous variables. In other words, we want to test the significance of the influence of variables affecting other variables. Exogenous variables are stated to have a significant effect on endogenous variables if the p value (probability) <0.05. The results of hypothesis testing are presented in Table 5.

Table 5: Path Coefficients (Mean, STDEV, T-Values)

	Original Sample (O)	Sample Mean (M)	Standard Deviation ...	T Statistics...	P Values
Attitude (X4) -> Behavior (Y)	0.399	0.359	0.049	8.185	0.000
Environment (X2) -> Attitude (X4)	0.727	0.717	0.061	11.852	0.000
Environment (X2) -> Knowledge (X3)	0.717	0.676	0.031	23.123	0.000
Individual Characteristics (X1) -> Attitude (X4)	0.188	0.203	0.051	3.711	0.014
Individual Characteristics (X1) -> Knowledge (X3)	0.271	0.318	0.034	7.918	0.001
Knowledge (X3) -> Behavior (Y)	0.465	0.508	0.043	10.734	0.000

The hypothesis in this study is:

H0: the dependent variable has no significant effect on the independent variable

Ha: the dependent variable has a significant effect on the independent variable

The basis of decision making from the hypothesis test is if the value of P Value > α (0.05) then H0 is accepted and if the value of p value < α (0.05) then H0 is rejected. The hypotheses that can be explained based on the results in Table 5 are:

a. First Hypothesis

H0: Individual characteristics do not significantly influence the knowledge of coffee farmers

H1: Individual characteristics significantly influence the knowledge of coffee farmers

P value of 0.001 < 0.05 (α = 5%) means that Ho is rejected and Ha is accepted, individual characteristics significantly influence the knowledge of coffee farmers. The original sampel value of 0.271 indicates that individual characteristics have a positive relationship with the knowledge of coffee farmers. Thus, the better the individual characteristics, the better the knowledge of coffee farmers.

b. Second Hypothesis

H0: Individual characteristics significantly influence the attitudes of coffee farmers

H2: Individual characteristics significantly influence the attitudes of coffee farmers

P value of 0.014 < 0.05 (α = 5%) means that Ho is rejected and H2 is accepted, individual characteristics significantly influence the attitudes of coffee farmers. The original sample value of 0.188 indicates that individual characteristics have a positive relationship with the attitudes of coffee farmers. This research described that the better the individual characteristics, the better the attitude of the coffee farmer.

c. Third Hypothesis

H0: The environment has no significant effect on the knowledge of coffee farmers

H3: The environment has a significant effect on the knowledge of coffee farmers

P value of 0,000 < 0.05 (α = 5%) means that Ho is rejected and H3 is accepted, the environment has a significant effect on the knowledge of coffee farmers. The original sample value of 0.717 indicates that the environment has a positive relationship with the knowledge of coffee farmers. The better the environment, the more knowledge coffee farmers have.

d. Fourth Hypothesis

H0: The environment has no significant effect on the attitudes of coffee farmers

H4: The environment has a significant effect on the attitudes of coffee farmers

P value of 0,000 < 0.05 (α = 5%) means that Ho is rejected and H4 is accepted, the environment has a significant effect on the attitudes of coffee farmers. The original sample value of 0.727 indicates that the environment has a positive relationship with the attitudes of coffee farmers. It concluded the better the environment, the better the attitude of coffee farmers.

e. Fifth Hypothesis

H0: Knowledge has no significant effect on the behavior of coffee farmers

H5: Knowledge has a significant effect on the behavior of coffee farmers

P value of 0.000 < 0.05 (α = 5%) means that H0 is rejected and H5 is accepted, knowledge has a significant effect on the behavior of coffee farmers. The original sample value of 0.465 indicates that knowledge has a positive relationship with the behavior of coffee farmers. Furthermore, the better the knowledge, the better the behavior of coffee farmers.

f. Sixth Hypothesis

H0: Attitude has no significant effect on the behavior of coffee farmers

H6: Attitude has a significant effect on the behavior of coffee farmers

P value of 0.000 < 0.05 (α = 5%) means that Ho is rejected and H6 is accepted, the attitude has a significant effect on the behavior of coffee farmers. The mean sample value of 0.399 indicates that attitudes have a positive relationship with the behavior of coffee farmers. It expressed the better the attitude, the better the behavior of coffee farmers.

a. Seventh Hypothesis

Table 6: Specific Indirect Effects

	Original Sample ...	Sample Mean...	Standard D...	T Statistics...	P Values
Environment (X2) -> Attitude (X4) -> Behavior (Y)	0.290	0.255	0.020	14.713	0.000
Individual Characteristics (X1) -> Attitude (X4) -> Behavior (Y)	0.075	0.074	0.024	3.137	0.026
Environment (X2) -> Knowledge (X3) -> Behavior (Y)	0.333	0.343	0.036	9.294	0.000
Individual Characteristics (X1) -> Knowledge (X3) -> Behavior (Y)	0.126	0.161	0.019	6.541	0.001

H0: Individual characteristics do not significantly influence the behavior of coffee farmers with knowledge as a mediating variable.

H7: Individual characteristics significantly influence the behavior of coffee farmers with knowledge as a mediating variable.

P value of 0.001 < 0.05 (α = 5%) means that H0 is rejected and H7 is accepted, individual characteristics significantly influence the behavior of coffee farmers with knowledge as a mediating variable. The original sample value of 0.126 indicates that individual characteristics have a positive relationship with the behavior of coffee farmers with knowledge as a mediating variable. Moreover, the better individual characteristics and knowledge, the better the behavior of coffee farmers.

h. The Eighth Hypothesis

H0: Individual characteristics do not significantly influence the behavior of coffee farmers with attitude as a mediating variable

H8: Individual characteristics significantly influence the behavior of coffee farmers with attitude as a mediating variable

P value of 0.026 < 0.05 (α = 5%) means that H0 is rejected and H8 is accepted, individual characteristics significantly influence the behavior of coffee farmers with attitude as a mediating variable. The mean sample value of 0.075 indicates that individual characteristics have a positive relationship with the behavior of coffee farmers with attitude as a mediating variable. The research shows the better individual characteristics and attitudes, the better the behavior of coffee farmers.

i. Ninth Hypothesis

H0: The environment has no significant effect on the behavior of coffee farmers with knowledge as a mediating variable

H9: The environment has a significant effect on the behavior of coffee farmers with knowledge as a mediating variable

P value of 0.000 < 0.05 (α = 5%) means that H0 is rejected and H9 is accepted, the environment has a significant effect on the behavior of coffee farmers with knowledge as a mediating variable. The mean sample value of 0.333 indicates that the environment has a positive relationship with the behavior of coffee farmers with knowledge as a mediating variable. The conclusion expressed that the better the environment and knowledge, the better the behavior of coffee farmers.

j. Tenth Hypothesis

H0: The environment has no significant effect on the behavior of coffee farmers with attitude as a mediating variable

H10: Environment significantly influences the behavior of coffee farmers with attitude as a mediating variable

P value of 0.000 < 0.05 (α = 5%) means that H0 is rejected and H10 is accepted, the environment has a significant effect on the behavior of coffee farmers with attitude as a mediating variable. Thus, the mean sample value of 0.290 indicates that the environment has a positive relationship with the behavior of coffee farmers with attitude as a mediating variable. It concludes the better the environment and attitude, the better the behavior of coffee farmers.

5. Conclusion

Based on the results of research on the Analysis of Factors Affecting Coffee Farmer Behavior in Tanah Datar District, it can be concluded that:

1. knowledge and attitudes significantly influence the behavior of coffee farmers and have a positive connection. Meanwhile, knowledge and attitudes are significantly influenced by individual and environmental characteristics, and coherence with a positive relationship. Individual characteristics significantly influence the behavior of coffee farmers with knowledge and attitude as a mediating variable and have a positive relationship. The environment has a significant effect on the behavior of coffee farmers with knowledge and attitude as a mediating variable and has a positive relationship

6. Suggestion

Need to improve environmental variables, with government policies that support quality coffee products, in the form of counseling and training activities, support in promotion and price approval, support in procurement of production procurement, support in marketing, development and support for accession of information with quality products can be accessed by farmers, as well as the creation of institutions that facilitate and oversee coffee farmers.

References

[1] Nalurita, Sari. 2014. Competitiveness Analysis and Formulation of Indonesian Coffee Agribusiness Development Strategy[Thesis]. Postgraduate. Bogor Agricultural Institute. Bogor.

[2] Ministry of Agriculture. 2016. Outlook Coffee; Agricultural Sub-Sector Agriculture Commodities. Center for Agricultural Data and Information Systems Secretariat General of Ministry of Agriculture

[3] Handayani, Alfina. 2015.Evaluation of Post-Harvesting Levels of Robusta Coffee in Accordance with GMP(Good Manufacturer Practices) [Journal]. National Seminar on Local Food, Business and Eco-Industry Semarang, 1 August 2015.

[4] Novita, Elita, et al. 2010. Improving the Quality of People's Coffee Beans with Clean Production of Semi Wet-Based Processing[Journal]. Agrotek Vol. 4, No. 1, 2010: 76-90.

[5] Mahyuda, et al. 2018. Adoption Rate of Good Agricultural Practices of Gayo Arabica Coffee Cultivation by Farmers in Central Aceh District [Journal]. Journal of Counseling, September 2018 Vol. 14 No. 2

[6] Kusuma, Lingga. 2008. Farmer's Behavior in Fresh Food Production and Handling in West Lampung Regency [Journal]. Bogor Agricultural Institute. Bogor.

[7] Setiawati, AstrianaRahmi. 2016. Planning for Use of Plantation Commodity Land in Tanah Datar District, West Sumatra Province. [Thesis]. Graduate School. Bogor Agricultural Institute. Bogor.

[8] Nazir, Moh. 2005. Research Methods. Ghalia Indonesia. Bogor.

[9] Nisa, Khairatul. 2019. Analysis Factor that Affects Supply Chain Performance in Achieving Marketing Performance of Processed Coconut Wood in Padang Pariaman District [Thesis]. Andalas University.

Padang.

[10] Wardhani, Andy Corry. 2005. Faktor-Faktor Yang Memengaruhi Perilaku Komunikasi Penyuluhan Pertanian [Jurnal]. Mediator, Vol. 7 No.270 2 Desember 2006

[11] Amir, Reza Mardhiyah. 2017. Pengaruh perilaku kewirausahaan terhadap kinerja umkm olahan ubi kayu di kota padang [Tesis]. Sekolah Pascasarjana Institut Pertanian Bogor. Bogor.

[12] Rambe, Sri Suryani M. 2011. Perilaku Petani dalam Usahatani Padi di Lahan Rawa [Jurnal]. Prosiding Seminar Nasional. Balai Pengkajian Teknologi Pertanian Bengkulu. Bengkulu