

IDENTIFICATION OF FACTORS RELATED TO THE SATISFACTION OF ROBUSTA COFFEE FARMERS IN SUMBERMANJING WETAN SUBDISTRICT, INDONESIA

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ABSTRACT: Farmers' satisfaction with economic conditions when carrying out coffee farming in Indonesia can be built from several social and psychological dimensions. This study examines factors related to coffee farmer satisfaction in Sumbermanjing Wetan Subdistrict, Indonesia. A two-stage random sampling procedure was used to select 224 respondents on which a questionnaire was administered. Descriptive statistics involving frequency counts, percentages, means and the Likert scale were used to present the results of the study. Pearson's Product Moment Correlation and Chi-square analyses were used to test the hypotheses of the study. The results of this study revealed that the majority of respondents were men (73.2%), 26.8% of respondents were women, and the majority were members of farmer groups (99.1%). The study concludes that the variable that has a significant relationship with farmers' financial conditions is gender (r -value -0.110; p -value 0.050) and membership in farmer groups petani (r -value 0.111; p -value 0.049). There is also a significant relationship between the economic conditions of coffee farmers and the dimensions of community satisfaction (X^2 31.626; Asymp.Sig.(2-sided) 0.000) and dimensions of cooperative behavior (X^2 30.336; Asymp.Sig.(2-sided) 0.034).

Keywords: Coffee farmers, satisfaction, financial condition, social, cooperative behavior

1. INTRODUCTION

Robusta coffee plantations in Sumbermanjing Wetan Subdistrict, Indonesia are one of the foundations of a strong economy for many coffee farmers [1]. Farmers' satisfaction with various aspects of the lives of farmer groups can influence their economic conditions and welfare is a complex issue that can be explained using a sociological approach. In the case of coffee farmers, social interactions with fellow farmer group members can influence their level of satisfaction with the community and cooperation within the group. The concept of social interaction in sociology examines how individuals interact with each other in a social context, the interactions that emerge will continue to how social norms are formed which will influence farmer cooperative behavior [2].

The exploration of how individuals are connected in social networks and how these networks influence social and economic satisfaction is often discussed in a sociological approach called social network theory. Social networks can play an important role in sharing information, resources and support between farmers in the context of coffee farmers' lives. The strength of the social network in the community they join will also influence farmers' satisfaction with the living conditions they live in and the farming business they are currently doing [3].

In farmer groups, the level of social capital can influence the extent to which farmer group members are willing to work together and share limited resource allocation [4]. Social capital includes aspects such as trust, social norms, and cooperation in society. The closeness and strength of social capital in a farmer group will encourage satisfaction and better economic conditions for the farmers who are members of it [5].

Several of these sociological concepts, together with the increasingly in-depth issues of sustainable rural development, are closely related to efforts to improve the welfare of robusta coffee farmers in the Sumbermanjing Wetan Subdistrict. This

study attempts to outline how these factors are interrelated and influence the economic conditions of coffee farmers and contribute to the sustainability of broader rural development.

2. MATERIALS AND METHOD

2.1. Study Area

Sumbermanjing Wetan Subdistrict, which is located in the southernmost part of Malang Regency, East Java Province, Indonesia, was chosen as the current study area. Sumbermanjing Wetan Subdistrict has a total area of 27.218,49 Ha and lies between longitude 112°40'31" E – 112°46'34" E and latitude 8°14'43" S – 8°24'11" S. According to Malang Regency statistics in 2021, the Sumbermanjing Wetan area is inhabited by 100.065 residents, consisting of 31.691 heads of families, the majority of whom work as farmers and farm laborers [6].

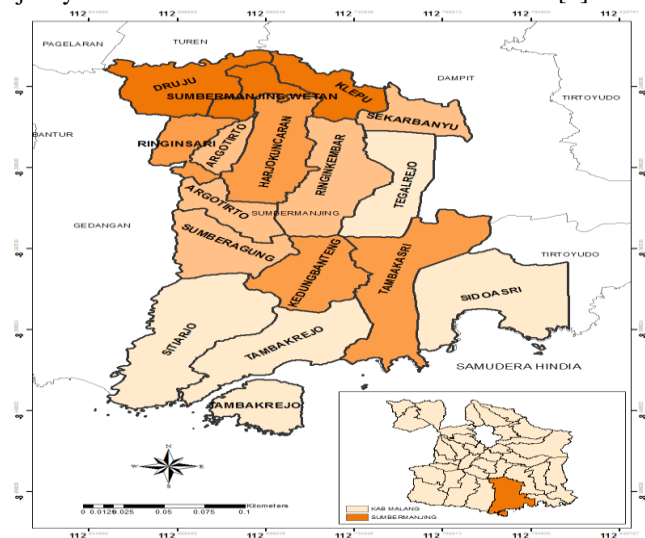


Figure 1. Map of the study area.

Statistics show that in 2022, land use will be divided into several types of commodities, including coffee covering an area of 1.066 Ha, cocoa covering an area of 405 Ha, sugar cane covering an area of 2.780 Ha, and coconut covering an area of

1.437 Ha. Apart from that, there is a forest area of 1.384 ha, of which the community is allowed to manage an area of 30 Ha [7].

The population of this study is coffee farmers who carry out coffee farming in Sumbermanjing Wetan Subdistrict, Malang Regency, East Java Province, Indonesia. A two-stage random sampling procedure was used to select and determine respondents in this study. The first stage involves randomly selecting 50% of all farmers registered as coffee farmers in Sumbermanjing Wetan District. The second stage was to randomly select 20% of the members of 51 farmer groups registered with the Sumbermanjing Wetan Subdistrict Government to obtain a total of 224 respondents.

2.2 Instrument and Data Analysis

Questionnaires were used for data collection. The interview schedule of the questionnaire consists of two parts. Part 1 asks about farmers' basic information, such as age, gender, marital status, completed formal education, number of families, farming experience, and farmer membership in farmer groups. Part 2 focuses on farmer satisfaction in the dimensions of community, social living, and cooperative behavior. Based on each farmer's answers, the investigator completed a questionnaire on a Likert-type scale (1 = very dissatisfied, 2 = slightly dissatisfied, 3 = indecision, 4 = satisfied, 5 = very satisfied). Data analysis for the study involved both descriptive and inferential statistical tools. Descriptive statistics such as frequency counts, percentages, means, and the Likert scale. An aggregate mean of 3.0 was considered a moderate level of satisfaction, a mean score above 3.0 was considered a high level of satisfaction while a mean below 3.0 was considered a low level of farming. The Pearson's Product Moment Correlation (PPMC) and Chi-square analysis were used to test the hypotheses of the study.

3. RESULTS AND DISCUSSION

3.1. Farmers' Characteristics

The characteristics of the 224 samples are shown in Table 1. The male sample accounted for 73.2% of the sample size, which was slightly higher than the female sample size (26.8%). The majority of the sample of farmers selected were married (88.8%). Most of the interviewed farmers were over 46-55 years old. The educational background distribution of the interviewed farmers is relatively even with primary school, junior high school, high school, and college degrees or above, among which elementary school education is the largest (37.5%). The number of families living with farmers is mostly 3-5 people (51.3%). Farming experience generally answers 1-11 years (42%), the majority of whom are members of farmer groups (99.1%).

Table 1. Descriptive Statistics for the Sample.

Variables (n=224)	Frequency	Percentage
Age (mean=years)		
From 16-25 years	12	5.4%
From 26-35 years	28	12.5%
From 36-45 years	69	30.8%
From 46-55 years	77	34.4%
More than 55 years	38	17%
Gender		
Male	164	73.2%
Female	60	26.8%

Marital status		
Not married yet	8	3.6%
Married	199	88.8%
Divorced	7	3.1%
Divorced by death	10	4.5%
Completed Formal Education		
No school	5	2.2%
Elementary school	84	37.5%
Junior high school	76	33.9%
High school/Vocational school	57	25.4%
Bachelor degree	2	0.9%
Number of families		
1-3 people	86	38.4%
3-5 people	115	51.3%
5-7 people	22	9.8%
7-9 people	1	4%
Farming experience		
1-11 years	94	42%
11-21 years	50	22.3%
21-31 years	44	19.6%
31-41 years	21	9.4%
41-50 years	15	6.7%
Type of work		
Nonfarming	2	0.9%
Farming	222	99.1%
Member of farmer group		
Not a member of the farmer group	29	12.9%
Member of a farmer group	195	87.1%

3.2 Farmers' Satisfaction with Dimension of Community, Social Living, and Cooperative Behaviour

3.2.1 Farmers' Satisfaction with Dimension of Community

In general, farmer satisfaction with farmer group programs in the communities they participate in is relatively high (Mean 4.44; SD 0.24) and also farmers' satisfaction with the smooth flow of agricultural information when joining a community is high (Mean 4.43; SD 0.28).

Table 2. Result of Correlation of Farmer Satisfaction with Attributes in the Community Satisfaction Dimension

Variable	r-value	Sig.(p-value)	Remark
Farmer Group Program	.755	.000	Significant
Agricultural Information	.763	.000	Significant

Table 2 is the result of a correlation analysis between two attributes of satisfaction with the community using the Pearson correlation method. Pearson correlation is a statistic that measures the extent to which two variables move together linearly, with a value range between -1 (perfect negative correlation) to 1 (perfect positive correlation), and a value of 0 indicates no linear correlation.

The correlation between "Farmer Group Program" and "Community Satisfaction" has a fairly high correlation value, namely 0.755. In addition, the significance (p-value) for this correlation is less than 0.01, indicating that the relationship between farmer group programs and the level of satisfaction in the community is statistically significant. The correlation between "Agricultural Information" and "Community

Satisfaction" also has a high correlation value, namely 0.763. As before, the significance (p-value) for this correlation is less than 0.01, indicating that the relationship between agricultural information and community satisfaction is also statistically significant. This is in line with previous findings [8] which indicate that the decision to choose information channels is influenced by institutional factors and the attributes of farmers.

3.2.2 Farmers' Satisfaction with Dimension of Social Living

Farmers' satisfaction with attributes in the social living dimension. In general, farmers' satisfaction with the ease of finding someone to talk to was relatively high (Mean 4.44; SD 1.11). Farmers' satisfaction with the ease of having close friends is also high (Mean 4.43; SD 1.10). Farmers also feel satisfaction with the smooth communication with close neighbors (Mean 4.43; SD 1.12). Farmers' satisfaction with active participation in local religious and traditional events is also high (Mean 4.44; SD 1.09). Farmers in general also feel satisfied with the togetherness in harmonious rural life (Mean 4.44; SD 1.08). Farmer satisfaction is also relatively high with current family life (Mean 4.60; SD 0.89).

Table 3. Result of Correlation of Farmer Satisfaction with

Variable	r-value	Sig.(p-value)	Remark
Friends Talk	.513	.000	Significant
Best Friends	.535	.535	Significant
Communication with Neighbors	.539	.000	Significant
Participation on Social Activities	.470	.000	Significant
Harmonius Rural Life	.549	.000	Significant
Satisfaction with Living Conditions	.485	.000	Significant

Attributes in the Social Living Dimension

The variable "Social Living Satisfaction" has a significant and positive correlation with all the attributes asked of farmers regarding how satisfied they are with social living. These correlation values are quite high, with Pearson coefficients ranging from 0.470 to 0.549, and all significance values have a p-value < 0.01, indicating a significant relationship at a high level of confidence (0.01). Previous research [9] also supports this finding, where farming activities during one planting season are significantly closely related to farmer life satisfaction.

3.2.3 Farmers' Satisfaction with a dimension of Cooperative behavior

Farmer satisfaction on attributes in the cooperative behavior dimension. In general, farmers' satisfaction with the fair behavior of farmer group leaders/traditional leaders who can support the farming business of local farming communities is relatively high (Mean 4.44; SD 1.07). Farmers' satisfaction with the active participation of group members in work programs owned by farmer groups is also high (Mean 4.39; SD 1.13). Farmers also feel satisfaction with good responses when facing problems in farming (Mean 4.41; SD 1.09).

Farmer satisfaction with assistance from farmer groups and other farmers is also high (Mean 4.45; SD 1.07). Farmers in general also feel satisfied with the commitment and responsibility within farmer group organizations in making the mutually agreed work program a success (Mean 4.40; SD 1.13).

Table 4. Result of Correlation of Farmer Satisfaction with Attributes in the Cooperative Behavior Dimension

Variable	r-value	Sig.(p-value)	Remark
Fair behavior of the group leader	.494	.000	Significant
Active role in the work program	.635	.000	Significant
Good responses	.608	.000	Significant
Help when facing problem	.605	.000	Significant
Commitment and responsibility	.514	.000	Significant

The variable "Cooperative Behavior" has a significant and positive correlation with all other attributes asked of farmers to find out how satisfied they are with cooperative behavior. These correlation values are high, with Pearson coefficients ranging from 0.494 to 0.635, and all significance values have a p-value < 0.01, indicating a significant relationship at a high level of confidence (0.01). This finding is reinforced by the results of previous research where cooperative behavior in farming plays a very important role in increasing crop yields and increasing income for individual farmers. Collaborative behavior and the presence of extension activities can encourage more efficient farming because targeted assessments and the suitability of the farming methods used will encourage the success of farmer group work programs [10].

3.3 Pearson's Product Moment Correlation (PPMC) Test between Respondent Characteristics and Farmers' Financial Conditions

A comprehensive picture of farmer satisfaction in terms of the economic conditions they experience requires an emphasis on the factors surrounding it. Referring to previous research, various factors have been tested that may influence farmer satisfaction, such as farmer age, gender, marital status, completed formal education, number of families, farming experience, farmers' social life relationships, cooperative behavior between farmers, and participation in groups farmer [11, 12, 13]. Discussion and complexity of findings in previous research regarding factors influencing farmer satisfaction can be categorized at two levels. The first level is individual farmer factors, and the second factor is farmer group-level factors. This study will discuss in more depth how the individual level and farmer group level are possible to influence farmers' satisfaction with their economic conditions.

At the level of individual farmer factors, farmer age, gender, completed formal education, family size, farming experience, farmer group membership, and participation may have an impact on their satisfaction with economic conditions. Previous research shows two different aspects of findings, for example, when farmers get older, the greater the energy devoted to farming, which creates higher satisfaction with their economic conditions, on the other hand, when farmers get older, their physical abilities decrease in managing the land, which results in Younger farmers will be more satisfied with their economic situation [14, 15]. This is related to the farming experience factor, older farmers may be more satisfied with current economic conditions. So it is possible that farmers with an average middle age will be very satisfied with their farming business and the current economic conditions they are living in.

The patriarchal culture in Javanese society greatly influences gender roles in farming. The condition of marital status also greatly influences the stigma that forms in the social life of farmers. So it is possible that male farmers will be more satisfied with their economic conditions because they are decision-makers and control resource allocation, while women tend to be dissatisfied because they are subordinate [16].

The higher the level of formal education a farmer has, the more responsive he is to the latest agricultural information, the quicker he understands government services related to farming, the more likely he is to receive assistance from existing policies, and the result is higher satisfaction [17].

Becoming a member of a farmer group also has an impact on farmer satisfaction. In Indonesia, farmers who are members of farmer groups can apply for subsidized fertilizer assistance from the government and also other assistance, such as counseling from the Plantation Service regarding the latest agricultural information, this makes farmers feel more satisfied with their economic conditions [18].

In terms of farmer group-level factors, this study tries to examine three main dimensions, namely how economic satisfaction is related to the dimensions of satisfaction in the community/group that is followed, the dimensions of social life, and the dimensions of cooperative behavior. Each dimension has a more detailed description of several attributes. In the first dimension, previous research found that farmer group programs and agricultural information obtained from farmer groups will make farmers who are members feel satisfied [19].

Previous research also found that the dimensions of social life, such as having close friends to exchange ideas with fellow farmers, good communication

between neighbors, and harmonious rural life also encourage farmer satisfaction [20].

The cooperative behavior dimension also has complex attributes such as fair behavior from the farmer group leader, active role of members in the farmer group work program, good response, help from fellow farmers if they experience problems, commitment and responsibility also have an impact on farmer satisfaction [2].

Pearson's Product Moment Correlation (PPMC) analysis was used to evaluate the relationship between respondent characteristics and the level of farmer welfare. PPMC is a statistical method that measures the extent to which there is a linear correlation between respondent characteristic variables and farmer welfare variables. The results of the PPMC test can provide insight into how strong or weak the relationship between these two variables is, whether the relationship is positive or negative and whether this relationship is statistically significant. Thus, this analysis helps in understanding the factors that might influence farmer welfare based on the observed characteristics of respondents.

Table 5. Result of PPMC Analysis of the Relationship Between Selected Demographic Characteristics and Financial Condition.

Variable	r-value	Sig.(p-value)	Remark
Age	0.063	0.176	Non- Significant
Gender	-0.110	0.050	Significant
Marital Status	0.055	0.206	Non-Signifikan
Completed Formal Education	-0.014	0.418	Non- Significant
Number of Families	-0.099	0.069	Non- Significant
Farming Experience	-0.082	0.110	Non- Significant
Type of Work	-0.017	0.402	Non- Significant
Member of Farmer Group	0.111	0.049	Significant

From the results of the analysis, several variables have a significant relationship with farmers' financial conditions, such as gender and membership in farmer groups. This supports previous findings, where when women become members of a farming group, the negative implications of gender bias can be avoided. The role of women as controllers of income sharing often occurs in the lowest income segmentation [21]. Meanwhile, other variables such as age, marital status, formal education, family size, agricultural experience, and type of work, do not have a significant linear relationship with farmers' financial conditions at the 0.05 significance level. This finding is in sharp contrast to research that does not use the

sociological and social network paradigm, wherein the majority of previous research this variable has a significant relationship with financial conditions [22, 23].

3.4 Chi-Square Test between the dimensions of Community Satisfaction, Social Living Satisfaction, and Collaborative Behavior Satisfaction with Farmers' Financial Conditions

To determine the relationship between community satisfaction, social living satisfaction, and cooperative behavior on farmers' financial conditions, the chi-square test was used. The chi-square test often called the chi-square test (X squared) aims to determine the relationship between variables contained in rows and columns. The type of data used in the chi-square test must be nominal or ordinal periodic frequency data (qualitative data) or it can also be nominal or ordinal scale data. The chi-square test is part of nonparametric statistical analysis. Therefore, the use of the chi-square test for research data analysis does not require the assumption of data normality.

Table 6. Result of Chi-square Analysis of the Relationship Between Community Satisfaction, Social Satisfaction, Cooperative Behaviour and Financial Condition

Variable	X ²	Asymp. Sig.(2 sided)	Remark
Community satisfaction	31.626	0.000	Significant
Social satisfaction	23.540	0.100	Non- Significant
Cooperative behaviour	30.336	0.034	Significant

Hypothesis 1: There is no relationship between financial conditions and community satisfaction among coffee farmers in the Sumbermanjing Wetan Subdistrict area.

Based on the Asymp value. Sig. (2-sided) in the Pearson Chi-Square test is 0.000. Because the value of Asymp. Sig. (2-sided) 0.000 < 0.05, then based on the basis for decision-making above, it can be concluded that H₀ is rejected. Thus, it can be interpreted that "There is a relationship between economic conditions and community satisfaction among coffee farmers in the Sumbermanjing Wetan Subdistrict". This can also be interpreted that the higher the community satisfaction felt by farmers, the more economic conditions will improve, and conversely, the lower the community satisfaction felt by farmers, the lower economic conditions will be. To achieve good agricultural development, efforts are needed from all parties. The strategy of empowering farmers through innovation and information on farming will have a

positive impact on increasing farmers' income [24].

Hypothesis 2: There is no relationship between financial conditions and social satisfaction among coffee farmers in the Sumbermanjing Wetan Subdistrict area.

Based on the output table, the Asymp Sig. (2-sided) value in the Pearson test Chi-Square is 0.100. Because the value of Asymp. Sig. (2-sided) 0.100 > 0.05, then based on the basis for decision making above, it can be concluded that H₀ is accepted and H_a is rejected. Thus, it can be interpreted that "There is no relationship between economic conditions and social satisfaction among coffee farmers in the Sumbermanjing Wetan Subdistrict". This finding supports previous research where farmers who live in farming communities have a negative relationship between financial stress and social life satisfaction [25].

Hypothesis 3: There is no relationship between financial conditions and cooperative behavior among coffee farmers in the Sumbermanjing Wetan Subdistrict area.

Based on the output table, the Asymp Sig. (2-sided) value in the Pearson test Chi-Square is 0.034. Because the value of Asymp. Sig. (2-sided) 0.034 < 0.05, then based on the basis for decision making above, it can be concluded that H₀ is rejected and H_a is accepted. Thus, it can be interpreted that "There is a relationship between economic conditions and cooperative behavior among coffee farmers in the Sumbermanjing Wetan Subdistrict". This can also be interpreted that the higher the level of cooperative behavior carried out by farmers, the more economic conditions will improve, and conversely, the lower the cooperative behavior carried out by farmers, the lower the economic conditions will be. This finding complements previous findings, where farmers' perceptions of mutual trust and acceptance will encourage a strong commitment. The continued impact of a strong commitment will provide greater economic benefits than other members who are more passive [26].

Farmers' satisfaction with the required agricultural information will support and encourage more innovative farming techniques in a sustainable agricultural production setting [27]. The existence of sufficient information from agricultural information can help farmers in farmer decisions in the planning stage, the farming process, where to sell the commodities produced, and how to negotiate for better commodity prices [28]. The need for information will arise when a farmer faces problems beyond his experience so that the knowledge he has is unable to solve the problem independently, then the farmer's aspirations to seek information and the capacity to accumulate experience, social capital and efforts to learn from experience will usually form behavior in seeking the required information [29].

Social sustainability in farming can be approached from two points of view, the first is from the point of view of the social impact of the land in situ, for example, the

farmers, the farmers' families or it could also be the workers who work on the land. The second is the broader social impact of the land being cultivated, such as the contribution of farming to employment, how to distribute commodities in a more market-friendly manner, and the possibility of land as a means of recreation on the outskirts of urban areas [30]. Previous studies have found that the impact of farmers who manage their land independently will feel stronger autonomy in terms of competence and sustainability, besides that economic transformation is closely related to psychological costs which contribute to explaining the earnings gap between sectors and the type of work carried out. Investigating the determinants of farmer happiness also has a close relationship with the income earned by the farmer and there is a strong negative effect on the income earned by colleagues or neighboring farmers [22].

The logical consequence faced by a farmer in using cooperative behavior in the group he is involved in is to achieve effectiveness and can also be a step to predict the steps that will be taken in the future related to other members of the farmer group [31]. Farmers will face at least three combinations of interdependent economic components, namely the allocation of value obtained from what is obtained from a distribution of a trade in commodities grown, the allocation of uncertainty related to financial risk, and the allocation of property rights in a relationship or agreement within the farmer group [32]. Previous research reveals that satisfaction in business relationships is an instrument of increasing morale, cooperation between stakeholders, commitment and mutual trust, and efforts to minimize the potential for damage to previously established relationships [33, 34].

From the results of the analysis, two variables have a significant relationship with farmers' financial conditions or farmer welfare, namely community satisfaction and cooperative behavior. Meanwhile, another variable, namely social satisfaction, does not have a significant linear relationship with farmers' financial conditions at the 0.05 significance level.

4. CONCLUSIONS

The description of the strength of social networks and how these networks are formed in the community structure has a great influence on coffee farmers' satisfaction with their farming business and their economic conditions. A situation where the farmer group leader has strong leadership abilities has implications for collaborative behavior for the progress of farming individually and in the group in general, which will create further implications for mutual knowledge and appreciation of success among farmers.

Based on the findings, the study concludes that there is a significant correlation between community satisfaction, social living satisfaction, and cooperative behavior satisfaction with the attributes that form these three dimensions. Several variables at individual-level factors were found to have a significant relationship with farmers' financial conditions or farmer welfare, such as gender and membership in farmer groups. Meanwhile, for farmer group-level factors, community satisfaction and cooperative behavior have a significant relationship with farmers' financial conditions.

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