

POVERTY LEVEL OF TOBACCO PRODUCER HOUSEHOLDS IN EASTERN JAVA PROVINCE (CASE STUDY OF TOBACCO FARMERS IN SITUBONDO REGENCY)

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ABSTRACT

In this study using Farmer Income Survey (SPP) data, in the 2022 agricultural research survey, it was proposed to identify the impact of individuals on poverty levels in tobacco farming households in Situbondo Regency. The data sample used is 200 farmers who work in the agricultural sector of tobacco farming. Based on the results of descriptive analysis, it was concluded that the category of the age group was less than 25 years, with a minimum of elementary school education, the number of household members less than 4 people and the head of the household the number of poor people was higher in farmers who were more than 25 years old, had elementary school education, had more of 4 household members, and has a female head of household. Households (KRT) who are female have a greater number of poor groups than those who are not poor. Based on binary logistic regression analysis showed that age, education, number of household members, employment status, and gender of the head of the household had a statistically significant effect on the poverty status of tobacco farmers in the tobacco farming sector in Situbondo Regency. Farmers in tobacco farming who are between 45 and 64 years old, well educated, have few household members, are self-employed and have a male head of household tend to be less poor.

Keywords: *biner logistic regression, poverty line, worker*

BACKGROUND

Given the country's growing population, poverty is still a major issue in Indonesia. 24.79 million people still live in poverty, the majority of whom reside in rural areas. According to data (Central Statistics Agency, 2020), there are 12.60 people living in poverty in rural regions and 6.56% in urban areas in 2019. BPS Additionally, he said that dependents made up 49.41% of poor households (RT). The wellbeing of farmers is crucial since agriculture is their primary source of income and because they play a crucial strategic role in society, especially since most of the poorest households are located in rural areas. According to certain research, there are a lot of poor people living in rural areas. (Ruauw, 2010) claims that

Low income to meet basic needs is how poverty is usually defined. BPS measures the level of poverty in Indonesia with the aim of measuring it using the basic needs method. In addition to financial levels, social issues also have a role in poverty. Environment, and level of engagement and empowerment. To accurately assess poverty, it is necessary to take into account disability other than low income (Yacoub & Mutiaradina, 2020).

As a country with a relatively large area and sufficient agricultural land, villagers living in

rural areas should be able to live well and prosper. However, in reality, it is still in poor condition. The average rural area has residents with livelihoods as farmers or farm laborers (Kurniawan, 2021). Ma, Wang, & Wastfelt (2022) argues that farmers are always synonymous with agriculture and poverty. Setowati, Sasongko, & Rumbia (2018) also makes useful generalizations about poverty. Most of the poor live in rural areas and the main occupation is agriculture. Two-thirds of the poor live from subsistence farming and some small farmers work as farm laborers for low wages.

According to Habibullah (2020), an increase in NTP will reduce poverty. In 2019 poverty fell to 9.22%, while NTP nationally stood at 104.16 or exceeded 100. This value indicated that farmers experienced a surplus. Production prices rose more than the increase in consumer prices so that farmers' income increased more than their expenditure. Muhtarom, et al. (2020) argues that rural poverty has increased even though NTP has increased. According to Saragih, the July 2017 BPS release showed an increase in the number of poor people for the period September 2016 - March 2017, from 27.76 million to 27.77 million. During the same period, the Farmer's Exchange Rate (NTP) was 100.65 or an increase of 0.38% compared to the previous value of 100.53. The increase in NTP was due to the increase in the price index received by farmers by 0.26%, which was greater than the increase in the price index paid by farmers by 0.14%. Situbondo Regency is East Java's provinces, consisting of 17 sub-districts and 136 villages/wards.

Geographically, Situbondo Province mostly consists of coastal communities where fishermen make a living rather than rural communities who work as farmers. This affects style, culture, economic access, information, and other access, thereby reducing the possibility that people in a certain area will enjoy the same benefits as people with relatively different structural characteristics. One of the most widely grown commodities in Situbondo Regency is tobacco. Because the tobacco plant is a plant that has distinctive and unique characteristics and this plant has characteristic that can be influenced by various aspects, especially environmental aspects and local farmers' cultivation processes.

In Figure 1 shows the cultivation of tobacco farming in Situbondo Regency. In Situbondo Regency, there are several areas that have the largest land area, namely Suboh District and Mlandingan District, reaching 5,639 hectares. From the graph it can be seen also the decrease in the area of agricultural land in the last five years. The decrease in the area of land for farming can also be caused by the increasing number of industrial buildings which of course can reduce the space for farmers to grow crops. Another factor that can affect the reduced area of land is that rice farmers cannot make good use of existing agricultural land. Thus resulting in the area of agricultural land that could be maximized to get more production results to be reduced because it is not used properly.

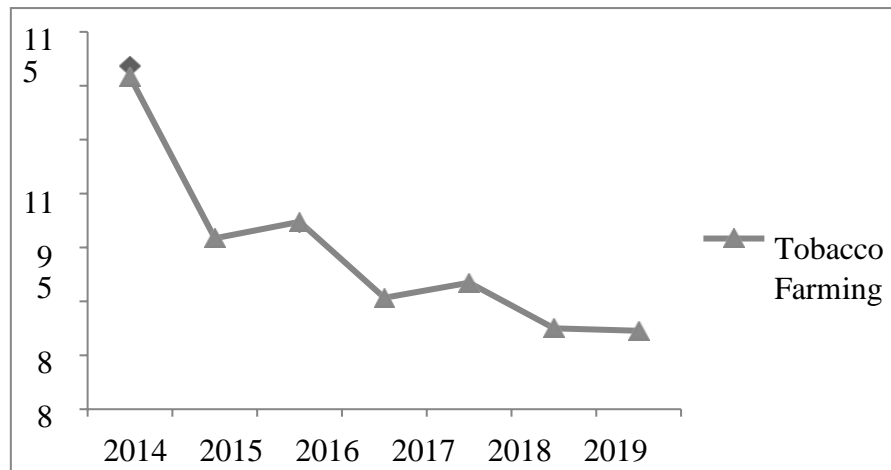


Figure 1. Distribution of Tobacco Land Areas in Situbondo Regency

One indicator that can be used to see the level of welfare of a farmer is through his income. The higher the level of welfare of the farmers, it will affect income, land area, length of education, number of children, and gender. In order for the welfare of tobacco farmers to be better, it must be done by obtaining greater income. With the commercial activities of these tobacco farmers, it is hoped that they will be able to increase their incomes to meet their day-to-day needs (Soekartawi, 2000).

As described above, the welfare of rural farmers is reflected in the wages of agricultural labour, or NTP, and is expected to have an impact on rural poverty. NTP increases, rural poverty decreases. If the wages of agricultural workers increase, rural poverty decreases. A phenomenon that emerges from the data observed in Indonesia, ideal conditions do not always exist. In certain years it is clear that there is a relationship between one variable and another when it is in ideal conditions, but in certain years it is not in ideal conditions. Based on this background, further research and analysis is needed so that researchers want to further examine the problem with the title of Poverty Rate of Tobacco Farmers in Situbondo Regency, East Java Province.

RESEARCH METHODS

This study used secondary data derived from primary data, where data were obtained directly from tobacco-producing households in the Suboh and Mlandingan districts. This method conducts a survey by taking samples as representatives of a population. Then the authors also carried out a survey of Agricultural Business Household Income on tobacco ethnic households as data in determining poverty levels. Then the data will be processed and analyzed.

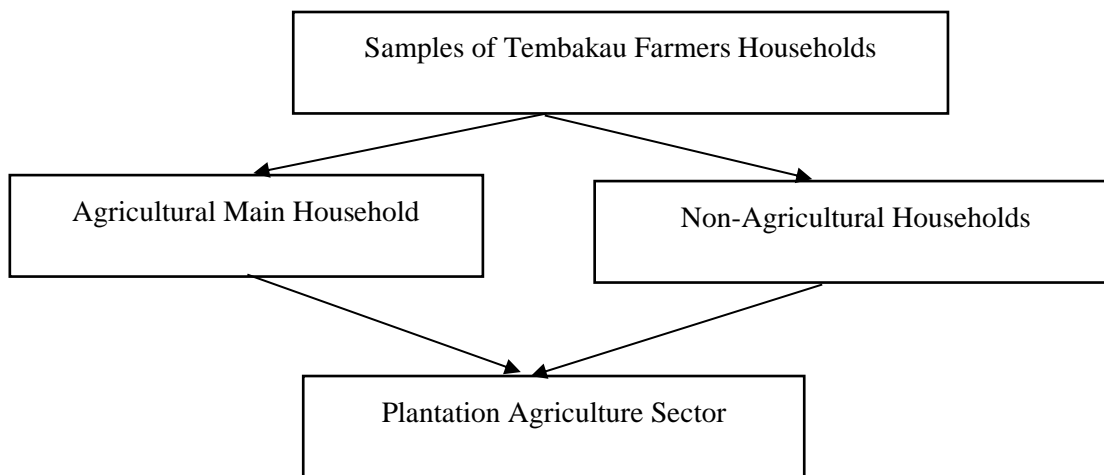


Figure 2. Selection of Sample Units

The analytical method used in this study uses two approaches, namely descriptive analysis and inferential analysis. The inference analysis method used in this study is the binary logistic regression model. Logistic regression models are used to analyze data when the dependent variable is a qualitative variable on a binary scale, or a multiple with one or more explanatory variables on a categorical scale (Nachrowi & Usman, 2005).

In looking at the binary/dichotomous logistic regression model, the dependent variable expressed in the logit function for $Y=1$ is compared to the logit function $Y=0$. Currently, the $Y=0$ category is called the reference category or reference category. For the tobacco farmer poverty rate model, namely: $Y=0$, if the farmer is not poor. $Y = 1$, if the workers are poor. This logit function or model has the following general form (Nachrowi & Usman, 2005). Category $Y = 0$ each is a reference category (reference group). In general, the form of the binary logistic regression model is written as follows:

$$Li = \ln \frac{pi}{1 - pi} = \beta_1 + \beta_2 X_i + u_i$$

The pi logit model is defined to follow the logistic distribution function. pi is defined as follows:

$$pi = \frac{1}{1 + e^z}; \text{ where as } Z_i = \beta_1 + \beta_2 X_i$$

And

$$1 - pi = \frac{1}{1 + e^{-xi}} = \frac{e^{-xi}}{1 + e^{-xi}}$$

Information:

- Li : The probability of the dependent variable
- pi : The probability of an event occurring
- (1-pi) : The probability that an event does not occur
- β : Regression coefficient

- X : Independent variable value
 e^z : Exponential function (where $e = 2,718$)
Z : Logistics function

The interpretation of the coefficients in the logistic regression model is carried out in the form of odds ratios or in adjusted probabilities (Nachrowi and Usman, 2005). Odds ratios are defined where there is a probability of success (event $y=1$) and $1-p$ denotes the probability of failure ($y=0$). In this study the odds ratio is used to determine the difference in farmers' risk of experiencing poverty according to each explanatory variable.

In the explanatory variable there is a categorical variable, so the odds ratio interpretation is done by comparing the odds value of one of the categories in the variable with the odds value of the other category that is used as a reference. So the risk of event $y=1$ in one particular explanatory variable category is $\exp(\beta_j)$ times the risk of event $y=1$ in the reference category. If the explanatory variable used is a continuous variable, then the interpretation of the regression model coefficients is that each increase in C units in the explanatory variable will result in the risk of the event $y = 1$ being $\exp(C \cdot \beta_j)$ times greater.

RESULT AND DISCUSSION

Farmer Poverty in Tobacco Farming Households

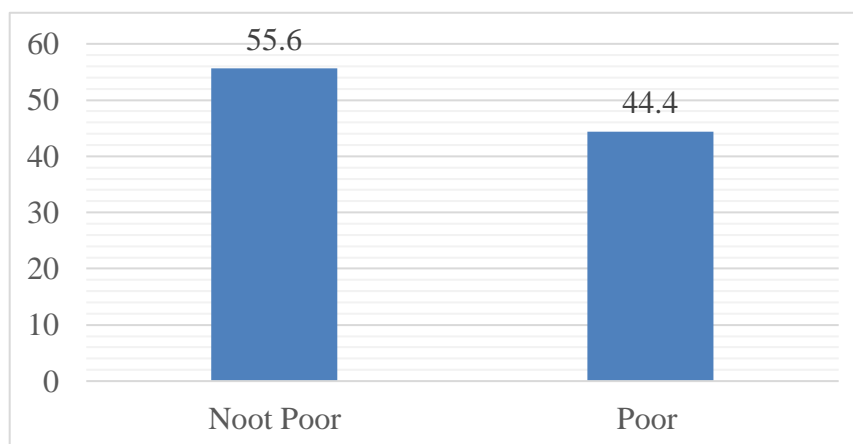


Figure 3. Distribution of The Poverty Percentage of Tobacco Farmers

Figure 3. shows the percentage of poverty in farmer households working in tobacco farming in Situbondo Regency. From the data it was found that in tobacco farming households there were 44.4 under the poverty line. This explains that as much as 44.4% of tobacco farming households are below the poverty line. Tobacco farmers are categorized as poor farmers obtained through a survey regarding labor income/wages. If the wages of rural farm workers rise or are relatively high, poverty will decrease, and vice versa if the wages of rural farm workers are low, then poverty will increase. In Situbondo District, the average wage for rural farm workers is low, so many tobacco farmers are classified as poor. This research is in line with research from Nurjihadi & Dharmawan (2016), that the main cause of poverty for a household is the low income they receive. However, research by Tarrel (2010) and Sabia (2014) argues differently, that is, with a high wage rate it results in

unemployment, due to the limited job opportunities offered, due to unemployment, poverty increases.

Figure 4. shows the distribution of poor/non-poor farmers working in tobacco farming by age group. Almost all age groups reported that the percentage of tobacco farmers who have income above the poverty line is higher than the tobacco farmers who have income below the poverty line. Only the age group over 25 years has a higher percentage of income below the poverty line than those above the poverty line. This happens because this age group is included in the group of workers at an early age or at the start of work who usually work without using the maximum skills and experience. These results are in line with research from Eurofound (2010) where workers at an early age will start working at low wages so they have the opportunity to be unprosperous. The results of this study are in line with research by Sharma & Singh (2015), the level of welfare of agricultural households is in farmers with the older the head of the household, where the older the head of the agricultural household the more experience he has generally gained in productive age. Where farmers whose income is below the poverty line is 52.4%.

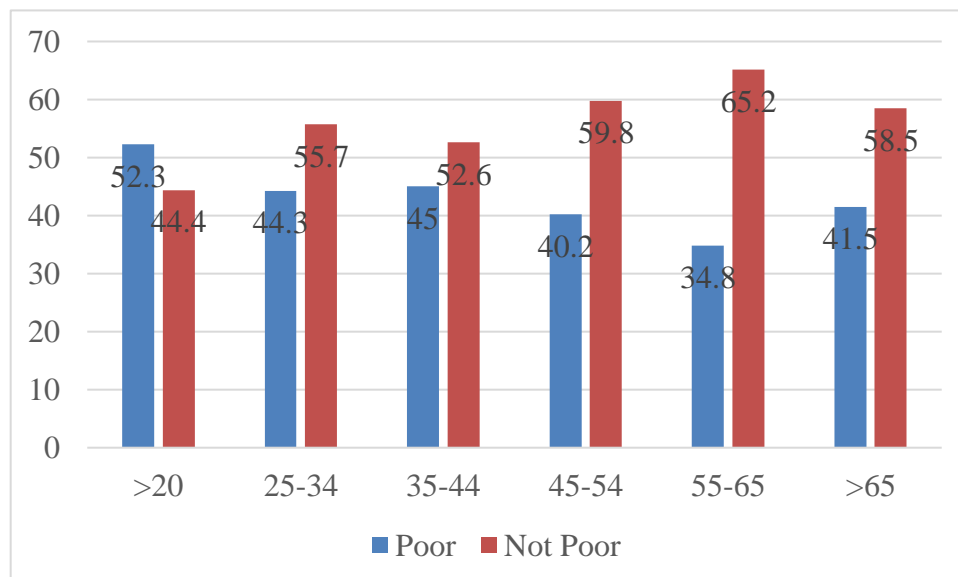


Figure 4. Distribution of The Poverty Percentage of Plantation Sector Farmers According to Age

Figure 5. Shows the distribution of farmer households in the poor and non-poor categories working in the tobacco farming business by education group. Almost all education groups explained that the percentage of tobacco farming households that have income above the poverty line is greater than the tobacco farmers who have income below the poverty line. Only the group with less than primary school education has a higher percentage of income below the poverty line than those above the poverty line. This explains because most of the workers with low education fall into the group of workers at a young age or early in their careers. A low level of education causes unpreparedness in work experience resulting in low income as well. The low level of education results in limited self-development abilities as well. Research results from Li, Chu, & Fang (2022) in China also explain that investment in education has the highest influence in earning income for farming households. The same research was also found in research results from Bokosi (2016) which explained that in 2012 in Malawi, the income of the head of a farming household with an elementary school education background was 11% lower than that of households with an educational background who did not attend school.

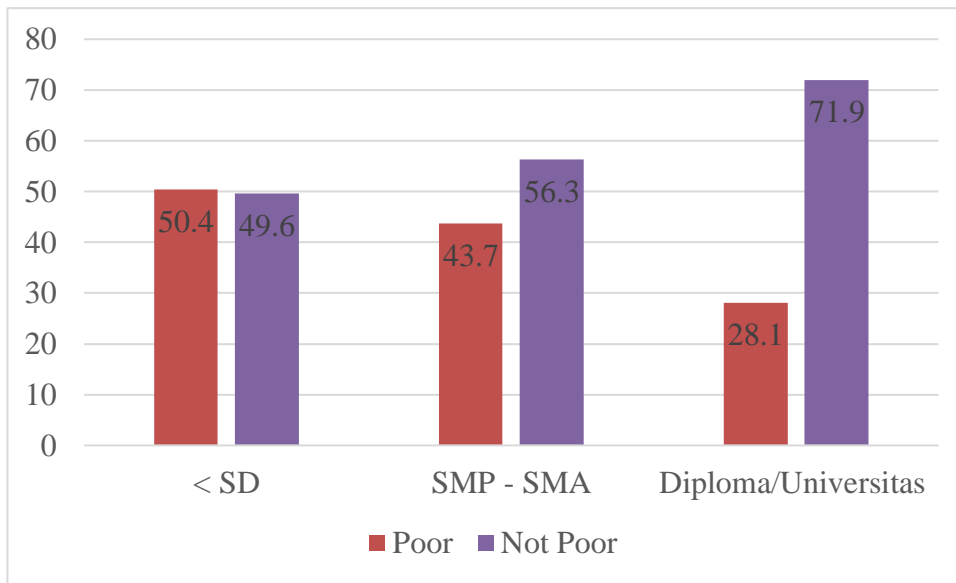


Figure 5. Distribution of The Poverty Percentage of Plantation Sector Farmers According to Education

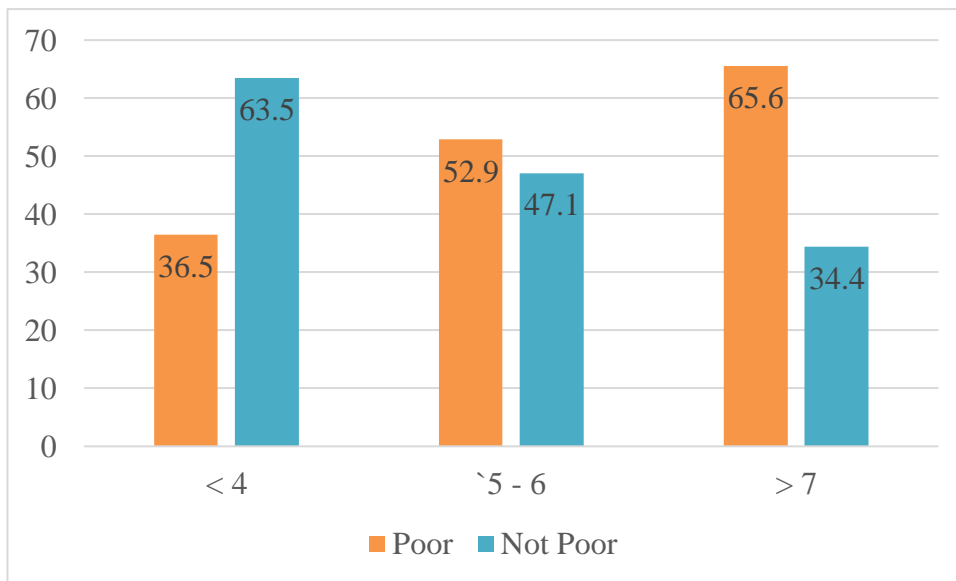


Figure 6. Distribution of The Poverty Percentage of Plantation Sector Farmers According to The Number of Household Members

Figure 6 shows the distribution of poor and non-poor farmer household members who work in tobacco farming in Situbondo Regency. Only one group, namely the group with less than four household members, has a higher percentage of income above the poverty line than the group above the poverty line. Conversely, groups with more than 4 household members have income below the poverty line. It is estimated that the more people in a household, the more dependents the head of the household has.

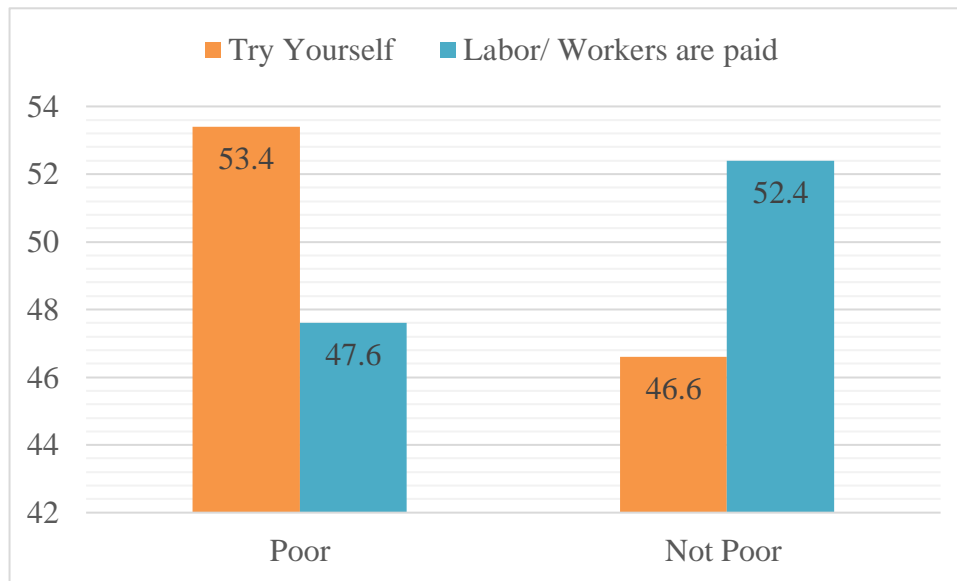


Figure 7. Percentage Distribution of Poverty of Tobacco Farmers in Situbondo Regency

Figure 7 shows the distribution of poor and non-poor farming households working in tobacco farming by activity group. Only the group with self-employed status has a higher percentage of income above the poverty line than the group above the poverty line. On the other hand, groups of workers/workers below the poverty line have higher incomes.

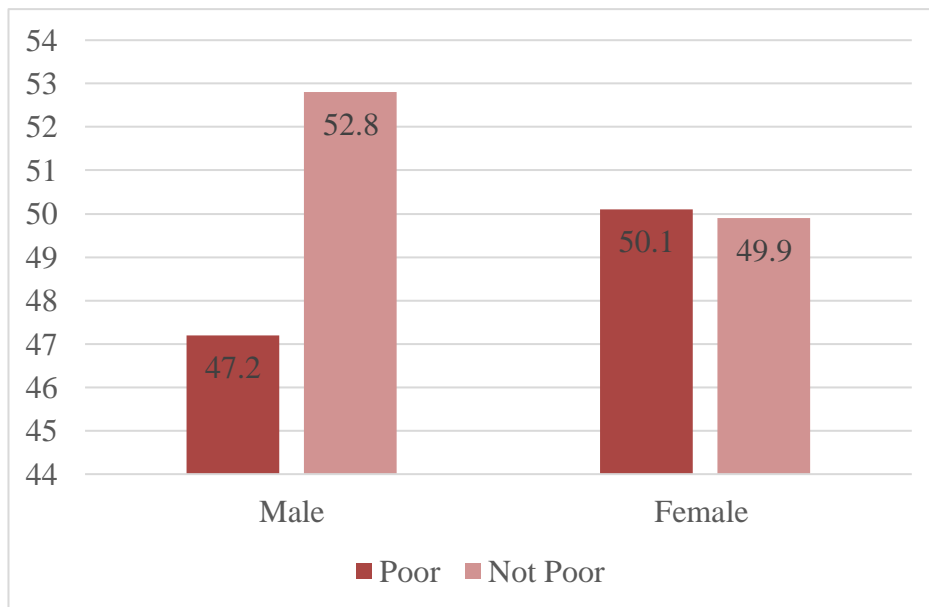


Figure 8. Distribution of the Poverty Percentage of Farmers in Tobacco Farming by Gender of Household Heads

Figure 8 shows the distribution of poor and non-poor farmers working in tobacco farming by head of household. Only the male head of household has a higher proportion of income above the poverty line than those below the poverty line. On the other hand, the income of female heads of households is below the poverty line. This is possible because the female head of the household is responsible for the household along with the plantation farmers. This is also in accordance with

Marpaung, Junpa, & Tjarsono (2018) which states that there are signs of the feminization of poverty, meaning that women suffer more from poverty than men.

Inferential Analysis

Table 1 presents the results of data processing in the form of a binary logistic regression model that describes the impact of individual and household factors on the development of poverty among farmers working in the smallholder sector. Based on the overall significance test, we found that all the independent variables could be used together to form the model. The first test that we see from the processing results is a test to find out whether all the independent variables can be used together to form a model. Analysis using -2 log-likelihood is 20,917,329, which is greater than the chi-squared value (2,982,117), we can conclude that all independent variables can be included in the model.

Based on Table 1. All independent variables have statistically significant coefficients that affect the dependent variable. The value of the coefficient (B) and the value of Exp (B)/odds ratio for each variable explains the direction of the relationship and the tendency of farmer households working in the small tobacco farming sector to become poorer. Variables with positive coefficients mean that farming households working in the smallholder sector tend to be poorer in this category than in the reference category. Variables with positive intervals or ratio size scales with coefficients imply that each unit increase in the independent variable means that farming households in the tobacco farming sector are more likely to be poor.

Based on the estimated coefficient value of the model parameter, the poverty model equation for farmers working in the tobacco farming sector using predetermined poverty line criteria is written as:

$$\ln \frac{p}{1-p} = 0,05 + 0,239U1 + 0,359U2 + 0,219U3 - 0,185U4 - 0,443U5 + 1,079D2 - 1,350ART1 - 0,590ART2 - 0,225S1 - 0,468JKRT1 + \epsilon$$

Table 1. Parameter Estimation (B), Significance and Odds Ratio (Or) Binary Logistic Regression Model of Poverty for Smallholder Smallholders with Poverty Line Criteria

Age (U)	B	Sig. .000	Odds Ratio
<25 (U1)	.239	.013	1.276
25-34 (U2)	.359	.010	1.280
35-44 (U3)	.219	.027	1.281
45-54 (U4)	-.185	.063	.879
55-64 (U5)	-.443	.001	.750
≥65* (U6)			
Education (D)		.000	
≤Elementary School (D1)	1.089	.000	2.911
High School (D2)	.1.079	.000	2.293
University* (D3)			
Number Household Members (ART)		.000	
≤4 (ART1)	-1.350	.000	.298
5-6 (ART2)	-.590	.000	.672

≥ 7 (ART3)			
Occupation (S)			
Entrepreneurs (S1)	-.225	.012	.830
Workers* (S3)			
Sex for Head of Household (JKRT)			
Male (JKRT1)	-.468	.000	.780
Female* (JKRT2)			
Constant	.005	.975	1.005

Source: Processed Data

The age variable has a significant influence on the tendency of poor status of farmer households to work in tobacco farming. The reference category is farmers who work for tobacco farmers who are over 65. Farmers aged 45-54 and 55-64 years have a tendency to be poor, respectively 0.879 and 0.750 times less than farmers who are less than 65 years old. Meanwhile, farmers aged more than 25, 25-34 and 35-44 years have a tendency to be poor, respectively 1.276; 1,280; and 1.281 times greater than farmers who are less than 65 years old. The age group of 45-64 years is more prosperous than the age group less than 65 and more than 25-44 years, this is possible because the productivity of farmers working in the smallholder plantation sector who are at productive age and the peak age of their careers is higher than their initial age. career and age are not productive, so the income is also greater. This is also in line with research from Arranz, Serrano, & Hermanz (2019) in Europe, where older workers have higher rates than younger workers because the quality of work for older workers is better than younger ones. Then it is also in line with the results from Dinlersoz, Hyatt, & Janicki (2019) which states that new companies are more likely to employ younger workers and give them lower income. Likewise with research from Li (2022) the increasing age of a worker, the worker's productivity will also increase but when age is old, productivity is also lower, the ability to think and accept technological advances begins to decrease, so there is a chance not to prosper.

The level of education has a significant impact on poverty trends among farmers who do tobacco farming. The reference category is farmers with diploma/university education and working in small tobacco farms. Table 1 shows that farmers with elementary, middle-high school education who work in the tobacco farming sector are 2,911 and 2,293 times more likely to be poor than farmers with diploma/university education. It is believed that farmers who are highly educated have higher incomes due to their higher skills and expertise. This result is in line with research conducted by Cutler & Muney (2011) which found that many variables in the population aged 15 years and over who graduated from high school or the equivalent were also indicators of education, and some had a negative impact on education and in theory education could affect the number the poor.

The variable number of household members has a statistically significant impact on poverty trends among tobacco farmers. The reference category is farmers who work in the tobacco farming sector with seven household members. Households 4 and 5-6 tend to be poorer, respectively 0.298 and 0.672 times smaller than households ART 7, and have a lower family fall rate. The same was found in studies by Sekhampu (2013) in South Africa and Bogale, Hagerdorn, & Korf (2013) in Ethiopia. Igbalajobi, Fatuase, & Ajibefun (2013) from Nigeria shows that increased use of ART is associated with an increased risk of household poverty.

Employment status has a statistically significant effect on the poverty trend of farmers in the

tobacco farming sector. The reference category is tobacco farmers with farm laborer status. Self-employed farmers are 0.830 times less likely to be poor than wage earners in the agricultural sector. This is possible because most of the income from plantations goes to the income of farmers who manage their own plantations, without having to share their income with other people (laborers/workers).

The sex of the head of the household has a statistically significant effect on the poverty status of farmers in the tobacco farming sector. The male household head is 0.780 times less likely to have a worse status than the female household head. This is possible because the female head of the household has a dual role as a worker and as a family member. As a result, their working hours are less than that of men, resulting in lower incomes. This is consistent with findings (Boudet, et al., 2018) showing that households headed by women tend to be poorer, indicating that this is due to the particular regional context. However, this is not in accordance with research from Origini, Ahonsi, & Ukwuije (2013) in Nigeria which used a household sample of 34,070 households using 2008 data from the Nigerian Demographic and Health Survey (NDHS), which found that the head of the household woman tendency of for male head of household.

CONCLUSION AND SUGGESTION

There are as many as 52.4% of farmers in the tobacco farming sector who have income above the poverty line (prosperous). Based on the results of the descriptive analysis, it can be stated that farmers in the age group >25 years, educated \leq SD, number of household members >4 people, paid labourers/workers and female head of household have a higher percentage of income below the poverty line than those above the poverty line. Meanwhile, based on inferential analysis using logistic regression, it can be stated that: (1). In the age variable, farmers with a young/early career age group, namely > 25-44 years, have a tendency to be poorer than older farmers; (2) On the education variable, farmers with low education groups, namely \leq SD to SMP-SMA, tend to be poorer than farmers with higher education; (3) In the variable number of household members, farmers with a large number of household members tend to be poorer than farmers with a small number of members; (4) In the activity status variable, farmers with activity status as laborers/paid workers tend to be poorer than self-employed farmers; (5) In the KRT gender variable, female KRT tend to be poorer than male farmers; (6) The points above conclude that the factor of low education, the factor of being too young or too old, the factor of having many family members, the factor of farm workers are more vulnerable to becoming poor farmers than other factors.

REFERENCES

- Agustiyan, R. (2010). Faktor-faktor yang Mempengaruhi Status Kemiskinan Pekerja di Indonesia (Analisa Data Susenas dan Sakernas 2008). Universitas Indonesia, Depok: Tesis Program Pascasarjana. Retrieved from <https://lib.ui.ac.id/detail?id=20341984&lokasi=lokal>
- Arranz, J., Serrano, C., & Hermanz, V. (2019). Job Quality Differences Among Younger and Older Workers in Europe: The Role of Institutio. Social Science Research. Retrieved From <https://pubmed.ncbi.nlm.nih.gov/31674337/>
- Badan Pusat Statistik. (2020). Statistik Nilai Tukar Petani. Jakarta: BPS. From <https://www.bps.go.id/>.

- Bogale, A., Hagerdorn, K., & Korf, B. (2013). Determinants of Poverty in Rural Ethiopia. *Quarterly Journal of International Agriculture*, 101-120. Retrieved From <https://www.zora.uzh.ch/id/eprint/64170/>
- Bokosi, F. (2016). Household Poverty Dynamics in Malawi. MPRS Paper.
- Boudet, A. M., Buitrago, P., Briere, B. L., Newhouse, D., Matulevich, E. R., Scott, K., & Becerra, P. S. (2018). Gender Differences in Poverty and Household Composition through the Life-cycle. *World Bank Group*. Retrieved from <https://documents1.worldbank.org/curated/en/135731520343670750/pdf/WPS8360.pdf>
- Cutler, D. M., & Muney, A. L. (2011). Understanding Differences in Health Behaviors by Education. *NIH Public Access*, 29(1), 1-28. doi: doi:10.1016/j.jhealeco.2009.10.003. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2824018/pdf/nihms156573.pdf>
- Dinlersoz, A., Hyatt, H., & Janicki, H. (2019). Who Works for Whom? Worker Sorting in a Model of Entrepreneurship with heterogeneous Labor Markets. *Review of Economic Dynamics*, 244-266. https://henryhyatt.com/wp-content/uploads/who_works_for_whom.pdf
- Djurfeltd, A., Djurfeltd, G., & Lodin, J. (2013). Geography of Gender Gaps: Regional Patterns of Income and Farm-nonfarm Interaction Among Male and Female Headed Households in Eight African Countries. *World Development*, 32-47. <https://ideas.repec.org/a/eee/wdevel/v48y2013icp32-47.html>
- Eurofound. (2010). Working Poor in Europe Fundation for Improvement of Living and Working Condition. Retrieved 10 04, 2023 from <http://www.eurofound.europa.eu>.
- Habibullah, M. (2020). Enam Faktor yang Mempengaruhi Kemiskinan Versi BPS. Jakarta. From kontan.co.id
- Igbalajobi, O., Fatuase, A., & Ajibefun, A. (2013). Determinants of Poverty Incidence Among Rural Farmers in Ondo State, Nigeria . *American Journal of Rural Development*, 131-137. <http://pubs.sciepub.com/ajrd/1/5/5/index.html>
- Kurniawan, F. E. (2021). The Dilemma of Agricultural Mechanization and the Marginalization of women Farmworkes in Riural Areas. *Sodality: Jurnal Sosiologi Pedesaan*, 02. doi:<https://doi.org/10.22500/9202132575>
<https://www.semanticscholar.org/paper/Community-decision-making-based-on-social-capital-Prayitno-Dinanti/3b0c42e25b16236124967ecfc204a9db2f6db9dc?p2df>
- Li, L. (2022). Reskilling and Upskilling the Future-ready Workforce for Industry 4.0 and Beyond. *PMC PubMed Central*, 1-16. doi: 10.1007/s10796-022-10308-y https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9278314/pdf/10796_2022_Article_10308.pdf
- Li, Z., Chu, Y., & Fang, H. (2022). Hierarchical Education Investment and Economic Growth in China. *Sage Journal*, 12(2). doi:<https://doi.org/10.1177/21582440221108159>
<https://journals.sagepub.com/doi/epub/10.1177/21582440221108159>
- Ma, L., Wang, S., & Wastfelt, A. (2022). The Poverty of Farmers in a Main Grain-Producing Area in Northeast China. *MDPI*, 11(5). doi: <https://doi.org/10.3390/land11050594>
<https://www.mdpi.com/2073-445X/11/5/594>
- Marpaung, Junpa, & Tjarsono, I. (2018). Peran International Labour Organization (ILO) dalam Melindungi Pekerja Anak di Thailand Tahun 2010-2014. *Jurnal Online Mahasiswa Fakultas Ilmu Sosial dan Ilmu Politik Universitas Riau*, 5(1), 1-13. <https://jom.unri.ac.id/index.php/JOMFSIP/article/view/16687/16112>
- Muhtarom, A., Haryanto, T., Istifadah, N., Wulansari, D., Wasiaturrahma, Purmiyati, A., & Afin, R. (2020). Productivity and Poverty Rural Farm Plants: Case Study in Jawa Timur, Indonesia. *International Journal of Management (IJM)*, 11(8), 694-708. doi:10.34218/IJM.11.8.2020.064 https://repository.unair.ac.id/113831/1/Atik%20Purmiyati_Karil2.1_Produvtivity%20and%20poverty%20rural.pdf

- Nachrowi, A., & Usman, H. (2005). *Penggunaan Teknik Ekonometrika (Edisi Revisi)*. Jakarta: PT. Grafindo Persada.
- Nurjihadi, M., & Dharmawan, A. (2016). Lingkaran Setan Kemiskinan Dalam Masyarakat Perdesaan Studi Kasus Petani di Kawasan Perdesaan Pulau Lombok. *Jurnal Sosiologi Perdesaan*, 120-127. <https://jom.unri.ac.id/index.php/JOMFSIP/article/view/16687>
- Sartika, C., Balaka, M. Y., & Rumbia, W. A. (2016). Studi Faktor-faktor Penyebab Kemiskinan Masyarakat Desa Lohia Kecamatan Lohia Kabupaten Muna. *Jurnal Ekonomi*, 1(1), 106-118. <https://ojs.uho.ac.id/index.php/JE/article/view/976/621>
- Sekhampu, T. (2013). Determinants of Poverty in a South African Township. *Journal Social Science*, 145-153. <https://www.tandfonline.com/doi/abs/10.1080/09718923.2013.11893126>
- Setowati, I. L., Sasongko, & Rumbia, W. A. (2018). Farmer Exchange Rate and Agricultural Land Conversion Analysis to Agricultural Sektor Poverty in Indonesia. *Jurnal Ekonomi dan Studi Pembangunan*, 10(1).
- Sharma, R., & Singh, G. (2015). Agricultural Technologies Acces and Farmer Household's Welfare; Evidence from India. *Millineal Asia*, 19-43. https://www.researchgate.net/publication/277594720_Access_to_Modern_Agricultural_Tecnologies_and_Farmer_Household_Welfare_Evidence_from_India