



Does Islamic Agricultural Fintech impact the income and poverty status of smallholder farmers during the COVID-19 pandemic? A review of empirical studies

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Abstract- This study examines the impact of Islamic Agriculture Fintech on farmers' income and poverty status. Random sampling and simple random sampling methods are used to collect data from 252 smallholder farmers. Result of the study indicates that Islamic fintech can positively and significantly impact if poverty status is measured using the national poverty standard. The impact is relatively minimal if poverty status is measured using international poverty standards such as extreme and moderate poverty standards, or generates US \$ 1 and US \$ 2 per capita per day as adopted by the World Bank and other international organizations. This study also found that smallholder farmers' *mudharabah muqayyadah* financing model can change their economic conditions better than those who receive *murabahah* financing. This study adds new evidence about the financial impact of Islamic Fintech on household socio-economic development. Investments in sustainable and resilient food systems are needed to improve food security during the COVID-19 pandemic. Therefore, the government needs to innovate in digitizing the financial sector and facilitating access to smallholder capital for a better life and availability of nutritious food for everyone.

Keywords: Islamic Agriculture Fintech, Investments, COVID-19 pandemic

I. INTRODUCTION

The agricultural and food systems will be more resilient, productive, and sustainable to digitize the agricultural sector. This sector is recorded as a relatively resilient sector to crises and a buffer sector during crisis times. Analysis of the SDGs Center UNPAD 2020 [1] also predicts that the agricultural sector will be the least affected by the COVID-19 pandemic compared to other sectors. The food system's sustainability will not survive a crisis such as the COVID-19 pandemic if there is no innovation in improved technology, capital, and better infrastructure. Smallholder farmers are particularly vulnerable to challenges caused by the COVID-19 pandemic, including supply chain disruptions because travel restrictions have obstructed market access, lack of access to irrigation equipment and other inputs, and a lack of labor [43]. In addition, the development of the agricultural sector cannot be separated from the main problems faced by farmers in gaining access to financial sources, especially from formal financial institutions [2]. Based on data from the 2016 National Socio-Economic Survey [2] only about 15% of the approximately 5,000 sample farmers have accessed bank credit. Most farmers, 52%, still rely on their capital, cooperatives, relatives, and other non-bank financial institutions.

The financial sector has an important role in increasing the agricultural sector's contribution to economic growth and poverty alleviation. Based on research conducted by [3, 4, 5, 6, 7] found that microfinance has a significant positive effect on increasing the income of poor households. Microfinance also has a positive impact on the productivity of the agricultural sector and reduces the level of poverty, as well as the inequality of poor households, research conducted by [8, 9, 10, 11, 12, 13, 14, 15].

The development of the agricultural sector is one of the tools for reducing extreme poverty, encouraging common prosperity, and projected to provide food for 9.7 billion people by 2020 [16]. Agriculture can also help reduce poverty, increase income and increase food security for the 80 percent of the world's poor who live in rural areas and work primarily in the agricultural sector [17]. As the most significant contributor to the agricultural sector, smallholder farmers face various obstacles in developing their agriculture, including (1) Smallholder farmers have difficulty accessing formal finance such as banks because many documents

are needed. Most banks require collateral, while farmers cannot afford it. (2) Access to good agricultural knowledge (Good Agricultural Practices (GAP)). There is much information promoting GAP, but there is a lack of people to help farmers and not ensure it is done properly. (3) Access to supply chain/market information, access to high-quality input at affordable prices are obstacles for farmers. Access to markets that can pay higher costs is also a challenge for them. Therefore, Islamic Fintech P2P lending can help smallholder farmers overcome the various challenges they face. Fintech P2P Lending assists with field managers in agricultural practices, new financing schemes by combining agroinput and e-wallet systems to reduce cash and combine smallholder farmers with an integrated agricultural ecosystem.

II. FINANCING PROVIDED BY PT TANIJOY AGRITEKNOLOGI NUSANTARA

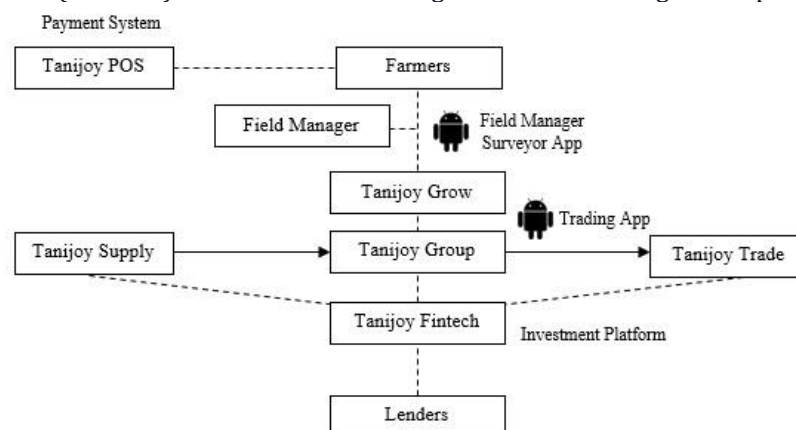


Figure 1. PT. Tanijoy Group Ecosystem

Figure (2) shows the financing scheme of PT. Tanijoy Agriteknologi Nusantara as an Islamic Fintech P2P Lending by using the *Mudharabah Muqayyadah* and *murabahah* financing model to connect investors and entrepreneurs. Based on the *mudharabah muqayyadah* financing agreement, the investor provides the capital to finance the project that has been determined at the beginning of the contract. Simultaneously, the entrepreneurs offer expertise where the project's profit/loss will be shared between the two parties according to the profit-sharing ratio at the beginning of the agreement. Meanwhile, *murabahah* is financing in the form of buying and selling for mutually agreed benefits. A sales contract in which the seller states costs and benefits [27].

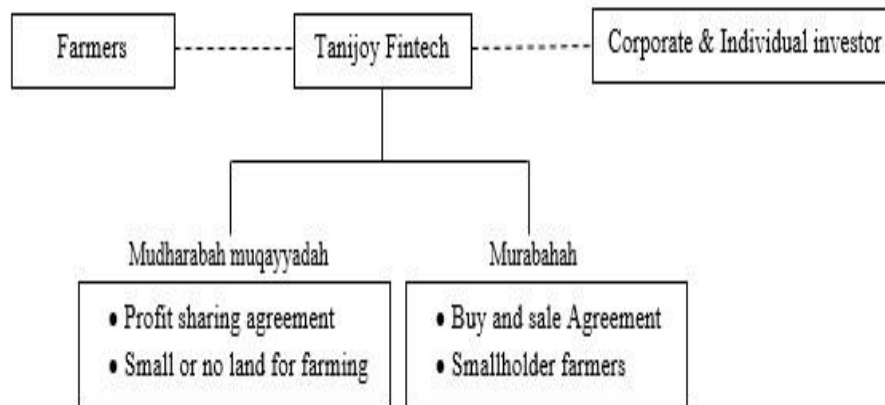


Figure 2. PT. Tanijoy Agriteknologi Nusantara's Financing Scheme

III. LITERATURE REVIEW

The financial sector plays an important role in increasing the agricultural sector's contributor to economic growth and poverty reduction. The Islamic Fintech financial sector's development can increase financial inclusion to provide quality, affordable, and easily accessible financial services based on *Sharia* principles for small and medium-sized entrepreneurs who are unbankable to increase income and reduce poverty levels. Research conducted by [28] shows that farmers' access to credit is an inconstant factor affecting farmer households' welfare. [29] also found a positive relationship between agricultural loans and economic growth with a higher GDP growth rate of around 7-10 percent. The agricultural sector must have adequate access to the financial sector to contribute the economic growth. Other studies have found that agricultural credit can increase agricultural income and productivity, which has also been done by [15, 30]. Further research has been carried out by [31] that agricultural credit can increase the adoption of climate-smart agricultural (CSA) technology in Zimbabwe and Malawi. The study also found that the impact of credit and extension services on technology adoption was less prominent for young and female farmer groups than for male and older farmer groups. [29] found a positive influence of credit access finds that access to agricultural credit tends to have a significant positive impact on the rich, wealthiest, and those receiving large volumes of credit but tend to have little or no effect ethnic minority incomes. So that only households that have an economy with favorable economic conditions tend to benefit and get access to agricultural credit.

The agricultural credit program has a more significant positive impact in reducing regional disparities in poorest regions [9]. According to [32], the microfinance program has a higher positive effect on household income and savings. It reduces the poverty level of microfinance clients compared to nonclients. This research, also in line with [33], examined the impact of urban microfinance on the livelihood strategies of slum dwellers in Dhaka, Bangladesh. Analysis of the role of microfinance in poverty alleviation and the improvement of living standards also has in research [4]. Research Impact assessment on information and communication technology (ICT) of microfinance institutions conducted by [8] found that the ICT dimension in financial instruments for financial inclusion in sixty-two countries can accelerate economic growth and reduce poverty and inequality. [23] uses Islamic financial technology in Indonesia's agriculture as an alternative to increasing financial inclusion and overcoming farmer capital problems.

This impact assessment method is generally used by businesses with a social mission because it targets the category of clients who are poor, marginalized, or do not meet the requirements to receive bank financing, so this business offers opportunities for financial inclusion [34]. This social performance assessment needs to be carried out by microfinance institutions to monitor whether the social performance carried out has an impact on changes that occur in the client's life. The simple paradigm for assessing this impact is that X causes Y or the program to produce change. But in reality, there are other factors that influence this impact (eg. gender, role of company income in household, company location). IA can link reviews of institutional components and program procedures with client-level data to determine what is working well and what could be improved [35].

IV. RESEARCH METHODOLOGY

The approach in this study uses quantitative methods with the measurement theory of Impact Assessment (IA) to analyze the financial impact of Islamic financial technology on the income and poverty level of smallholder farmers in the horticulture sub-sector. Data processing is measured by the impact assessment method to see the impact indicators between the dependent variable and the independent variable. The statistical test used in this study is the logistic regression method and Poisson regression.

4.1 Statistical models

This model was developed to see the effect of independent variables based on natural categories. Research using a similar model includes [6, 36], What this model does:

$$\begin{aligned} \ln \frac{\pi_i}{(1-\pi_i)} &= \alpha + \sum_{j=1}^n \beta_j x_{ji} + \sum_{k=1}^m \gamma_k D_{ki} + e \\ \ln \frac{\pi_i}{(1-\pi_i)} &= \alpha + \beta_2 MOF + \beta_3 AGE + \beta_4 GEN + \beta_5 EDUC + \beta_6 RLG + \beta_7 MRG + \beta_8 FAM + \beta_9 LZ \\ &\quad + \beta_{10} LOC + e \end{aligned}$$

MOF shows the *Sharia* financing model used in Fintech P2P Lending. AGE indicates the age category of the respondent. GEN is the sex of the respondent. EDUC shows the level of education of the respondents. RLG shows the religion of the respondent. MRG shows the marital status of the respondent. FAM shows the number of family members of the respondent. LZ shows the Land Size under cultivation. LOC indicates the location where the respondent lives.

4.2 Research Samples

The study population was taken from data assisted farmers who are members of PT. FARM Agriteknologi in West Java, East Java and North Sumatra, totaling 751 partner farmers. Types and sampling procedures in this study using cluster random sampling to produce samples. Sampling techniques in previous impact assessment studies such as [6, 36, 37, 38]. This study took three stages of sampling in conducting a survey. First, choosing the P2P Lending Islam Fintech company as the only agricultural fintech specifically for horticultural cultivation in Indonesia, where the assisted farmers are spread across three provinces, including West Java, East Java, and North Sumatra. Second, selecting 9 districts from 3 provinces as research objects. Of the 9 districts / cities, 23 respondents were selected as partner farmers, and 5 of them were not partner farmers. The clients of these farmers will be used as a control group to compare the impact of *Sharia* Fintech in West Java, East Java and North Sumatra. Third, conducting sampling using simple random sampling technique to produce survey respondents from nine districts / cities. Sixty-nine partner farmers and fifteen non-partner farmers from each province will be selected as respondents. The number of respondents used in this study were 252 respondents drawn from 3 provinces, where each province was 84 respondents.

V. EMPIRICAL RESULTS

5.1 Descriptive analysis

Table (2) shows the information on 252 farmer respondents based on demographic characteristics in West Java, East Java, and North Sumatra. We are taking research respondents from three cities/regencies in each province with the same composition. The analysis process contains ten control variables (independent variables) related to demographic and socio-economic characteristics and three dependent variables related to poverty standards based on the respondent's income level.

The farmer groups that receive Islamic Fintech financing in West and East Java are, on average, three to four years older than the farmer groups in North Sumatra. Meanwhile, the farmer groups that did not receive Islamic Fintech financing from the three regions were five to eight years older than the farmer groups who received the financing. The majority of farmer groups that receive financing are mostly men than women. There were no significant differences in the number of children and household dependents. The percentage of farmer groups that receive financing having senior secondary school is higher than that of farmers who do not receive financing. The majority of farmer groups who receive financing are Muslim, but non-Muslim farmer groups dominate farmer groups who receive Islamic Fintech financing in the North Sumatra region. The land managed by farmers who receive financing is also relatively wider than farmers who do not receive financing. Regarding income, the percentage of farmers who receive financing is higher than the national and international poverty lines compared to farmers who do not receive financing.

Table 1. Descriptive analysis of the respondent borrowers and non-borrowers

		West Java		East Java		North Sumatra	
Variable financing		Receive	Did not receive financing	Receive financing	Did not receive financing	Receive financing	Did not receive financing
N		69	15	69	15	69	15
Mean of Age		38	46.13	42.47	38.80	36.30	41.06
Household Size		3	3.46	2.89	3.80	2.77	3.80
Modes of Financing							
Mudharabah M. Murabahah		68	0 (0%)	69	0 (0%)	69	0 (0%)
		(80.95%)	15	(82.14%)	15	(82.14%)	15
		1 (1.19%)	(17.86%)	0 (0%)	(17.86%)	0 (0%)	(17.86%)
Gender							
Male Female		54	5 (5.95%)	68	6 (7.14%)	51	15
		(64.30%)	10	(80.96%)	9	(60.71%)	(17.86%)
		15	(11.90%)	1 (1.19%)	(10.71%)	18	0 (0%)
		(17.85%)				(21.43%)	
Marital Status							
Married Single		64	14	64	15	50	15
		(76.19%)	(16.67%)	(76.19%)	(17.86%)	(59.52%)	(17.86%)
		5 (5.95%)	1 (1.19%)	5 (5.95%)	0 (0%)	19	0 (0%)
						(22.62%)	
Education							
<Senior School	High	47	2 (2.38%)	58	15	31	15
		(55.95%)	13	(69.05%)	(17.86%)	(36.90%)	(17.86%)
			(15.48%)				
>Senior School	High	22		11	0 (0%)	38	0 (0%)
		(26.19%)		(13.09%)		(45.24%)	
Religion							
Islam Non Islam		61	15	53	15	5 (5.95%)	15
		(72.62%)	(17.86%)	(63.09%)	(17.86%)	64	(17.86%)
		8 (9.52%)	0 (0%)	16	0 (0%)	(76.19%)	0 (0%)
				(19.05%)			
Land Size							
< 1 Hectare > 1 Hectare		0 (0%)	15	38	15	33	15
			(17.86%)	(45.24%)	(17.86%)	(39.29%)	(17.86%)
		69	0 (0%)	31	0 (0%)	36	0 (0%)
		(82.14%)		(36.90%)		(42.85%)	
International Poverty Standard							
< 2 \$ 15 (17.86%)		32 (38.09%)	15 (17.86%)	33 (39.29%)	15 (17.86%)	4 (4.76%)	

> 2 \$	37 (44.05%)	0 (0%)	36 (42.85%)	0 (0%)	65
(77.38%)	0 (0%)				
National Poverty standard					
S	3 (3.57%)	7 (8.34%)	4 (4.76%)	7 (8.34%)	0 (0%)
< 425.250 IDR	66	8 (9.52%)	65	8 (9.52%)	69
> 425.250 IDR	(78.57%)		(77.38%)		(82.14%)
					(17.86%)
Total	69	15	84	15	84 (100%)
	(100%)	(100%)	(100%)	(100%)	(100%)

5.2 Income and poverty status of Smallholder Farmer

Table 2. The Effect of Islamic Fintech Financing Exposure on Smallholder Poverty Status

Variables	Poverty Level of Small Farmers								
	Model 1 (Subjective Poverty)			Model 2 (National Poverty Standard)			Model 3 (International Poverty Standard)		
	Wald	Sig	Exp(B)	Wald	Sig	Exp(B)	Wald	Sig	Exp(B)
Mode of Islamic financing (MOF)	41.054	0.000	0.015	7.067	0.008	23.591	0.000	0.997	78561
Gender (GEN)	0.601	0.438	0.737	0.787	0.375	3.889	0.411	0.522	0.683
Age (AG)	0.005	0.942	1.001	0.096	0.756	0.983	3.197	0.074	0.955
Education (EDUC)	15.876	0.000	4.102	3.755	0.053	42.723	2.369	0.124	2.091
Religion (RLG)	4.211	0.040	0.415	0.000	0.991	0.000	22,153	0.000	0.044
Marital Status (MRG)	1.322	0.250	0.546	0.000	0.992	2313	0.022	0.883	1.127
Number of Member within the household (FAM)	0.896	0.344	0.715	0.000	0.991	0.000	16.072	0.000	0.122
Land size (LZ)	4.023	0.045	2.170	1.171	0.279	3.087	5.964	0.015	3.578
Location (LOC)	8.830	0.003	0.267	0.788	0.375	2.593	3.602	0.058	2.710
Intercept	19.287	0.000	140.38	0.000	0.992	49735	0.000	0.998	0.000
Chi Square	77.061			135.449			191.397		
Pearson	0.530			0.121			0.268		
Deviance	0.604			0.720			0.340		
Hosmer-Lemeshow	0.267			0.938			0.280		
Cox & Snell R ²	0.263			0.416			0.532		
Nagelkerke R ²	0.351			0.815			0.712		
Classification	72.6%			97.2%			82.9%		

5.2.1 Income and poverty status based on subjective poverty standards

In model (1), the researcher looks at Islamic Fintech financing exposure on the smallholders' income and poverty level based on subjective poverty standards. The Wald (W) test results have 5 (five) explanatory variables that have a significant effect on the poverty status of smallholder farmers, which include: (1) Mode of Islamic financing (MOF); (2) Education (EDUC); (3) Religion (RLG); (4) Land size (LZ); (5) Location (LOC). The Mode of Islamic financing (MOF) variable has a Wald test value of 41,054 and it is found to be significantly and positively related to the dependent variable. The Islamic financing model has a positive

contribution to farmers to declare themselves above the poverty line. This result is in line with research [6]. Rationally, financing in the form of capital provided to farmers will increase the agricultural sector productivity. These study results are in line with research conducted by [10, 39]. The facilities provided by Islamic Fintech in the form of capital and information and communication technology affects financial inclusion and is beneficial for poverty alleviation as in [8, 23].

The educational variable (EDUC) has a Wald test value of 15.876 and found to be significantly and positively related to the dependent variable. This shows that the higher the education of the farmers' education farmer will claim to be above the poverty line. Religion variable (RLG) has a Wald test value of 4.211 and is positively and significantly related to the dependent variable. This shows that religion contributes to increasing the chances of Muslim farmers claiming to be above the poverty line. This study's results are consistent with research conducted by [6, 36]. The Land Size (LZ) variable has a Wald test value of 4.023 and is found to be significantly and positively related to the dependent variable. This suggests that Land Size will increase the likelihood that farmers will claim to be above the poverty line. A study conducted by [7] shows that increasing land area will increase borrowers' ability to bring them to a higher standard of living. The results are not surprising as land size has been shown to increase household income [36]; The size of agricultural land will also increase the likelihood of household financial access [40, 41].

Location Variable (LOC) has a Wald test value of 8.830 and is proven to significantly and positively contribute to the dependent variable. This shows that there is a chance that farmers on the island of Java have the opportunity to declare themselves above the poverty line compared to farmers outside Java. The Nagelkerke R^2 value is 0.351, and Cox & Snell R^2 is 0.263, indicating that the independent variables' ability to explain the dependent variable is 0.351 or 35.1%, and 64.9% other factors outside the model that explain the dependent variable. The model feasibility test (Goodness of Fit) using the Pearson, Deviance, and Hosmer-Lemeshow methods gave results with p-values of 0.530 each; 0.604 and 0.267. If $\alpha = 0.05$ is chosen, then H_0 is accepted because there is no significant difference between the model and its observation value. The classification table for the analysis of the effect of Islamic Fintech on smallholder farmers' income and poverty status, as shown in table (3), shows the correct prediction of 72.6%, which is far above the criteria for an opportunity accuracy of 43.47%. It means that the logit model is feasible to use. Chi-Square value is 77.061 > Chi-Square table 18.307 with a significant level of 0.000 where $\alpha < 0.05$ so that there is a simultaneous effect of the independent variable on the dependent variable.

5.2.2 Income and poverty status based on National poverty standards

Model (2) partially, the Wald (W) test results have 2 (two) explanatory variables that have a significant effect on the poverty status of smallholder farmers, which include: (1) Mode of Islamic financing (MOF); and (2) Education (EDUC). The findings in the model (2) are the same as the model (1), where the Variable Mode of Islamic financing (MOF) has a Wald test value of 7.067, and it is proven to be significantly and positively related to the dependent variable. This shows that the financing model contributes to increasing the chances of farmers being above the national poverty standard. Farmers who receive financing using the *mudharabah muqayyadah* model have a greater chance of living out of poverty than farmers who receive *murabahah* financing. In fact, partner farmers who receive *mudharabah muqayyadah* financing enjoy better economic conditions than other partner farmers. This research is in line with the results of research by [6]. The education variable (EDUC) has a Wald test value of 3.755 and is positively and significantly related to the dependent variable. This proves that education contributes to increasing opportunities for farmers to increase income to be above the national poverty standard— similar research by [6, 7, 40] found that education has a significant effect on participation in the export market. Participation in export markets will have a positive impact on income, prices, and labor input. The Nagelkerke R^2 value is 0.815, and Cox & Snell R^2 is 0.416, which indicates that the independent variables' ability to explain the dependent variable is 0.815 or 81.5%. There are 18.5% other factors outside the model that explain the dependent variable.

The model feasibility test (Goodness of Fit) using the Pearson, Deviance, and Hosmer-Lemeshow methods gave results with p-value respectively 0.121; 0.720; and 0.938. If $\alpha = 0.05$ is chosen, then H_0 is accepted because there is no significant difference between the model and its observation value. The classification table for the analysis, shows the correct prediction of 97.2%, which is far above the criteria for an opportunity accuracy of 43.47%. This means that the logit model is feasible to use. Chi-Square value is 191.397 > Chi-Square table 18.307 with a significant level of 0.000 where $\alpha < 0.05$ so that there is a simultaneous between the independent variable on the dependent variable.

5.2.3 Income and poverty status based on International poverty standards

In model (3) partially, the results of the Wald (W) test, there are 5 (five) explanatory variables that have a significant effect on the poverty status of smallholder farmers, which include: (1) Age (AGE); (2) Religion

(RLG); (3) Number of Family Members (FAM); (4) Land Size (LZ); and (5) Location (LOC). The age variable (AGE) has a Wald test value of 3.197, and it is proven to be significant and positive with the dependent variable. This suggests that the financing model contributes to increasing farmers' chances of being above international poverty standards. Many researchers use the variable age as an independent variable in their regression analysis to assess its effect on borrower savings, agricultural production, household income, and consumption [38] in [7]. Other studies have found that age significantly impacts the farmers' total income [3, 33]. Farmers have more experience, which in turn helps them increase their household income levels. Many Religion Variables (RLG) have a Wald test value of 22.153 and positively and significantly affect the dependent variable. This shows that religion contributes to increasing the chances of Muslims significantly impacts be above international poverty standards. These results are consistent with research conducted by [6, 36]. The variable number of family members (FAM) has a Wald test value of 16.072 and is proven to be significantly and positively related to the dependent variable. This shows that the number of family members contributes to increasing the chances of farmers being above international poverty standards. This shows that the higher the number of family members who earn the higher the family income. The results of this study supported by [12]. However, these results are contrary to [42]) as the number of family members increases, per capita income will decline.

The variable Land Size (LZ) has a Wald test value of 5.964 and positively and significantly affects the dependent variable. This shows that Land Size contributes to increasing farmers' chances of being above international poverty standards. The land Size contributed significantly to total revenue [3]. However, this natural capital provides land and female off-farm workers as contributors to overall household income. Location Variable (LOC) has a Wald test value of 3.602 and was found to significantly and positively affect the dependent variable. This proves that agricultural locations on the island of Java contribute to increasing international poverty standards compared to outside Java. The Nagelkerke R² value is 0.712, and Cox & Snell R² is 0.532, which indicates that the independent variable's ability to explain the dependent variable is 0.712 or 71.2%. There are 28.8% other factors outside the model that explain the dependent variable. The models' feasibility test (Goodness of Fit) using the Pearson, Deviance, and Hosmer-Lemeshow methods gave results with each p-value of 0.268; 0.340; and 0.280. If $\alpha = 0.05$ is chosen, then H₀ is accepted because there is no significant difference between the model and its observation value. The classification table for the analysis, shows the correct prediction of 82.9%, which is far above the criteria with an opportunity accuracy of 43.47%. This means that the logit model is feasible to use. Chi-Square value is 191.397> Chi-Square table 18.307 with a significant level of 0.000 where <Alpha 0.05 so that there is a simultaneous between independent variable on the dependent variable.

VI. RESEARCH IMPLICATIONS AND CONCLUSIONS

This study finding has several key implications for academics, Islamic Fintech financial institutions, and policymakers. For academics, this study adds new evidence about the financial impact of Islamic Fintech on household socio-economic development. The existence of Islamic Fintech can provide low-income smallholders to get access to financial services. Islamic Fintech helps them to diversify their household income and alleviate their poverty. In short, this study provides an insight into the role of Islamic Fintech in empowering smallholder farmers in developing countries from the perspective of the Indonesian context. This study shows that Islamic Fintech can significantly contribute to smallholder farmers' income and poverty levels in the horticulture subsector. This study finds that Islamic Fintech can positively and significantly impact if poverty status is measured using the national poverty standard; Government Agencies measure the state's formal poverty status. The impact is relatively minimal if poverty status is measured using international poverty standards such as extreme and moderate poverty standards, or generates US \$ 1 and the US \$ 2 per capita per day as adopted by the World Bank and other international organizations. This study also found that the *Mudharabah Muqayyadah* financing model given to smallholder farmers can change their economic conditions better than those who receive *Murabahah* financing.

The agricultural sector, as a support sector for the impact of the COVID-19 pandemic on the economy in Indonesia. Investments in sustainable and resilient food systems are needed to improve food security during the COVID-19 pandemic. Therefore, it is necessary to digitize the financial sector and provide easy access to smallholder farmers' capital to better life and availability of nutritious food for everyone. The digitalization of the financial sector also plays a central role in creating jobs for smallholder farmers, especially those with low education. Therefore, Islamic Fintech opens opportunities for smallholder farmers to play an important role in economic development. Despite a significant impact on household income, many existing clients have not yet graduated from the scheme and become financially independent. Indonesian government policymakers must also address this issue on transforming the socio-economic

welfare strategy from relying on financing for agriculture as a source of income to build their capacity. Therefore, future research must pay attention to increasing agricultural businesses' sustainability and growth financed by Islamic Fintech.

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