The role of Islamic micro finance institutions (MFI) in increasing farmer’s revenue

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Abstract
Poor people in Indonesia are mostly found in village region. 63% of the total poor people in Indonesia and majority of village people work as a farmer. The role of Islamic Microfinance Institution such as Islamic Cooperative is to increase the farmers income who has been the member of its cooperative. The purposes of the research are to analyze the difference of farmers’ income before and after applying the equity-based financing to islamic microfinance institution by using Paired T Test, and analyze which factors were affecting the farmers’ income in case study of farmers as the member of Islamic Cooperative Al-Ittifaq and used Ordinary Least Square method. The result shows that Islamic microfinance program significantly and positively affect the farmers income. The variables that significantly affect the income are size of financing taken by respondents, duration of membership, distance between farmer’s house & cooperative, and background of farmers’ education.

Keywords: Poverty, Funding, OLS, Two Paired T Test

Introduction

Majority of citizens in Indonesia work in agriculture sector. Agriculture is a sector that has great potential in employment in Indonesia and is an important sector in improving the welfare of farmers who constitute the majority of rural population work. The number of Indonesians working as farmers occupies the largest portion of 38.29 million people or 31.77% of the total workforce (Badan Pusat Statistik, 2016). The agricultural business sector occupies an average percentage of 10.26% of GDP in Indonesia with an average growth rate of 5.02% per year.

In the long term to 2025, the projected rate of agricultural production has increased in four subsectors that become the main commodity in agriculture (Ministry of 2011). The projection of the increase in production in all subsectors of agriculture becomes an opportunity to increase the number of GDP in Indonesia in the future. However, the projected rate of long-term agricultural production growth has not necessarily improved the living standards of rural farmers. This is indicated by the number of poor people in rural areas occupying the highest average percentage of 14.06% compared to the average percentage of the number of poor people in the city of 8.16% of the total population throughout Indonesia. Meanwhile, the rural population occupies 63% of the total poor population in Indonesia (Badan Pusat Statistik, 2016). Therefore, it takes the role of government to make the program so that agriculture business from micro scale to macro has growth from production rate

In practice, agricultural business is only an attempt made by the majority of people who lack adequate education, insufficient capital, and inadequate capability in business management so that micro-agricultural enterprises is difficult to develop. However, the main problem that is often encountered in agricultural business that causes difficulty to develop into a large agricultural business is the knowledge of capital access at capital institutions (Darwis & Rusandra, 2011). The government has done many capital programs for farmers such as Kredit Usaha Rakyat (KUR) and Kredit Usaha Tani (KUT). In addition to government programs in terms of capital for farmers, the government has implemented several other programs in increasing productivity and benefit of agricultural products as a form of concern for the welfare of farmers. Other programs provided by the government in physical form such as irrigation aid, fertilizer, pumping machine, construction
of clean water facilities, and so on. The program provided by the government, especially the aspect of capital for agriculture has not increased the income of farmers. This can be seen from the highest percentage of poor people in rural areas.

Previous research show attentions on Islamic microfinance in Indonesia (Sabiti & Effendi, 2017; Seibel, 2008; Suzuki, Pramono, & Rufidah, 2016; Wulandari & Kassim, 2016) as well as in other countries (Karim, Tania, & Farazi, 2012; Usman & Tasmin, 2016). Furthermore, researchers also pay attention on Islamic microfinance in terms of its capacity and stability (Ab Manan, Saleh, Kamarudin, & Haryadi, 2013; Ahmed, 2002). In relation to farmer and agriculture, studies on financing from many aspects has also been conducted (Agustania, 2009; Asih, 2007; Beik & Aprianti, 2013; Nasution, 2016). From these previous work, this research shows its distinction and focus in Islamic microfinance contribution to farmers.

When viewed through the theory of production functions disclosed in microeconomics theory, mentioned that the capital factor is a determinant of output produced by the manufacturer. The production theory sees that marginal capital-boosted input will compensate for the increase for output produced, which will have an impact on the revenue received by the producer.

\[ Q = f(K,L,M) \] ........ (1)
\[ TR = P \cdot Q \] ............. (2)
\[ \Pi = TR - TC \] ........... (3)

Q is defined as the amount of output produced by the manufacturer, K represents physical capital, L is the amount of labor, and M is the natural resource owned. Through the production function, it can be seen that the determinants of the amount of output produced by the manufacturer is determined by the capital owned, the amount of labor, and the resources owned in accordance with equation (1). Increased output generated by the manufacturer will certainly increase the revenue obtained by the manufacturer in accordance with the Total Revenue (TR) equation in equation (2). Thus, the profit (\( \Pi \)) earned by the producer will increase as the revenue increases with the assumed Total Cost (TC) assumptions that has fixed or minimized amount in accordance with equation (3).

The amount of capital (K), and labor (L) has a role to produce the amount of output in a certain level.

The existence of certain options for producers in production can be seen in two ways, namely increasing the capital so as to decrease the amount of labor, or lower the capital, to increase the number of labor, assuming the same amount of output produced. This is called Rate of Technical Substitution (RTS). This curve explains that an increase in the amount of capital and labor will increase the amount of output available as compensation for the increase in factors of production.

As seen based on theoretical behavior of Islamic producers, marginal capital made by producers
to increase output must have *maslahah* for the producers (peasants) in fulfilling human needs on a moderate level in order to achieve the goal of *Falah* (Victory) (Pusat Pengkajian dan Pengembangan Ekonomi Islam, 2007). *Maslahah* within the framework of producer behavior is an added result between benefit and blessing. In this case, *maslahah* (M) received by the producer is profit (Π), while blessing (B) is the reward obtained in production activities according to equation (8).

\[ M = \Pi + B \]  

\[ M = TR-TC-BC. \]  

*Maslahah* received by the manufacturer depends on the cost incurred and the blessing cost incurred in accordance with equation (9). In the short term, revenue received by producers will decrease due to the cost of such blessings, such as the use of production inputs that are slightly expensive but have more benefits than the production result thus increasing production costs. However, in the long term, it is hoped that the accumulation of blessings that exist can increase the reward for Islamic producers.

The capital distributed by the government as a way to increase the capital of farmers can theoretically increase the yields or outputs that imply on increasing incomes by farmers in general. Nevertheless, there is poverty in rural areas today, where the majority works as farmers. When viewed in theory the behavior of Islamic producers, marginal capital done to increase output must have *Maslahah* for producers (farmers) in fulfilling human needs at a moderate level in order to achieve the goal of *Falah*.

Many factors influence farmers' income aside from the capital aspect, namely: the inappropriateness between the needs of the community and the assistance provided; project packages not equipped with support skills; no planned monitoring activities; no institutions that are sustainable in assisting the program (Darwis & Rusastra, 2011). Looking at these factors, the capital aspect is not the sole determinant for farmers' income, but other factors also influence farmers' income.

**Research Method**

This study uses primary data sources, as well as secondary data (Firdaus & Harmini, 2011). Primary data were obtained by interviewing 60 farmers who collaborated with *kopsyar* Al-Ittifaq and staff of *kopsyar* Al-Ittifaq. Secondary data obtained from monthly and annual reports of BMT, Ministry of Cooperatives and UMKM, books, journals, undergraduate thesis, and postgraduate thesis that support this undergraduate thesis (Soemitra, 2009; Tambunan, 2009). This research was conducted at Islamic Cooperative of Pondok Pesantren Al-Ittifaq, Ciwideuy, Bandung, West Java Province. This research was conducted on the second week of September 2016 until the end of September 2016.

**Differences in farmers’ income before and after financing**

Financing by the Islamic Micro Financing Institution (MFIs) is expected to play a role in improving farmers’ income. Therefore, it is necessary to study the difference of farmers’ income before and after financing through MFIs. The T test method of two samples is a method to find the average difference of two observations in the same object. The T test of two sample looks at the differences made in two different conditions by looking at the difference in meanings in the two observations. In this research, two observations are seen that is difference of farmer's income before and after financing in cooperative.

**Factors that affect farmers’ income**

In determining the factors that affect farmers' income, the Ordinary Least Square (OLS) method is used. The OLS method or the simplest least squares method is a method for completing the average calculator. In this study, OLS regression model is used to analyze the factors that affect the average income of respondents. The OLS model used in this research is:

\[
\ln Y = \alpha_0 (i) + b_1 \ln X1 (i) + b_2 X2 (i) + b_3 D1 (i) + b_4 D2 (i) + b_5 D3 (i) + b_6 D4 (i) + b_7 D5 (i) + ei
\]

The model used in determining the factors that affect the farmer's income is X1 is the quantity of financing of *Qardhul Hasan* taken by the farmer. Then, X2 is the length of farmers become members of the cooperative. In addition, the dummy used in this model is D1 or the sex dummy
(Male = 1, and Female = 0). Then D2 as the age of the borrower (above 40 years is valued 1 and the others are 0). D3 is the branch distance Cooperative with farmer's house (Distance above 10 Km given value of 1 and others are 0). D4 is a formal education of farmers (Education over 6 years is valued 1 and others are given 0). D5 is the moral ethics of farmers (Running routine worship given value 1 and others are 0).

Result & Discussion

General outlook of Islamic Cooperative Al-Ittifaq, Bandung West Java

Pondok Pesantren (Ponpes) Al-Ittifaq led by Kyai Haji Fuad Affandi is one of LM3 (Institution of Self-Rooted in Society) which become model of agribusiness development specified by Ministry of Agriculture. Previously this institution named Pondok Pesantren Ciburial because it is located in Kampung Ciburial. Ciburial Ponpes was established on February 1, 1934 (16 Syawal 1302 H), then in 1975 changed the name to Pondok Pesantren Al-Ittifaq. When newly established, Ponpes Al-Ittifaq managed a modest education, leading to slow progress, even tending to run on the spot, coupled with a reluctance to open up and a lack of knowledge about the potential of the region.

Since 1970, Kyai Haji Fuad (head of Ponpes Al-Ittifaq today) has felt that teaching activities alone will not be sufficient for the needs of the santri (learner). In addition, he felt responsible for the independence of the santri. Therefore, he combined religious education activities with agricultural business activities in accordance with the natural potential around the ponpes. Agribusiness activities are even the backbone of pesantren activities. With his charisma, Kyai invites the community, students, PPL (Field Extension Officer) and KUD (Village Unit Cooperative) in the area to establish and manage vegetable farming. This joint development made Ponpes Al-Ittifaq designated as an agribusiness model established by the Ministry of Agriculture through the Decree of the Minister of Agriculture no. 555 / KPRS / DT.210 / 06/1997.

The scheme of financing for partner farmers is done two contracts. The first scheme of Qardhul Hasan Financing is the financing of interest-free loans and other additions. This financing is given to farmers generally in the form of agricultural production tools such as fertilizers, seeds, pesticides, etc., as well as nominal money sufficient for other purposes for agriculture. The harvest time for vegetable crops generally takes one to one and a half months. After the harvest, the farmer sells his vegetables to the cooperative with Murabahah scheme or regular sale based on the price in the market at that time. Furthermore, the cooperative will calculate the nominal of vegetables sold by farmers, and pay the vegetable yield minus the loans taken by farmers before.

To market the vegetables produced by the farmers, the cooperative will do the grading or classify the quality of vegetables in terms of appearance to be sent to several supermarkets that have partners with the cooperative. After the selecting process of vegetables qualifies for supermarket, the vegetables will be packaged according to the standard set by the supermarket. Then, vegetables that do not pass the grading will be sold to the central market of Bandung with a cheaper price from sales to supermarkets.

The profile of micro enterprises

Duration of education, age, duration as a member of Islamic cooperative, and distance between farmer’s house and cooperative office. The length of education of respondents has an average of 8.78, which means the average of the last education respondents to education up to the level of Junior High School (SMP) as many as 23 people. With the lowest education is the primary school (SD) and the highest education is S1. This happens because according to many respondents, education high education is not essential because having junior high school quality is enough to earn income for respondents.

Standard deviation on the age of respondents has a high enough value that is equal to 8.646, which means that the age of respondents who studied quite varied or diverse with the highest age of 56 years and the lowest age of 22 years. Thus, the age of the respondent can be inferred to be at the productive age of work. Age of respondents who are at work productive age is a mature enough to run the business because respondents with productive age will be more rational to the business undertaken.

The length of membership has a standard deviation value of 3.68, which means that the length
of membership for the respondent does not vary with the average length of business of 5.05 years. Minimum value of duration of membership is 1 year and maximum value is 13 years. This indicates that the respondents generally become members of the cooperative are long enough, so the intensity of financing taken through cooperatives is quite high.

Distance of respondent’s house to the location of cooperative has standard deviation value of 4524. It means that the distance of respondent’s house to the location of the cooperative is not varied, with an average of 6.8 km. Maximum value of the distance of the respondent’s house to the location of 18 km and the minimum distance of the respondent’s house to the cooperative location of 1 Km. The distance of respondent’s house to the location of the cooperative is generally close enough so that it is easy for them to reach the cooperative.

**Reasons for choosing financing in Islamic Cooperatives**

The majority of respondents choose financing in Islamic cooperatives due to the reason already familiar with the board of cooperatives, which amounted to 25% of the total respondents, it is marked that the proximity of Islamic cooperative which originated from pondok pesantren standing in the community is the reason that cooperative management close to the community (customer).

Easy terms to apply for financing occupy a percentage of 22% of the total respondents. An easy requirement to apply for financing only through photocopy of ID card and has the amount of savings in the cooperative at least 100 thousand rupiah is the reason considered by respondents to do financing in this cooperative.

The absence of collateral when applying for financing is selected as consideration by respondents to apply for financing, and occupies a percentage of 20% of the total respondents. The absence of collateral when performing Qardhul Hasan is a convenience provided by the cooperative to develop the farmers' business.

The reason for rapid disbursement of funds occupies a percentage of 17% of the total respondents. The disbursement of funds that only ranged from 1-3 days is a consideration for the respondents for the needs of capital of farming.

The location of the cooperative close to the respondent's residence is the reason for 13% of respondents to apply for financing in the cooperative. The location of the cooperative close to the respondent's residence will be linear with the intensity of the financing to be taken, because the ease of accessing the location of the cooperative close to respondent's residence.

The loan scheme that is in accordance with the aspect of Islamic is the reason for 3% of respondents in proposing financing. This indicates that the reason for the Islamic-compliant financing scheme is still not the main reason for the respondents to apply for financing in Islamic cooperatives. Therefore, it takes a wider socialization of financing in accordance with the principles of Islamic ways.

**Impact of financing on farmers income**

Change in income from frequency before financing and after obtaining financing that is equal to 0.429. It was identified that the difference in farmers' income before and after financing was 42.9%, which means that on average the farmer's income increased by 42.9% after financing from the cooperative. In addition, it can be seen the significance value of 0.000 < alpha (5%) has the conclusion to reject H0 which means to show that the T test is significant. Therefore, the conclusion that can be taken is there is difference of farmer earnings average at frequency before and after receiving financing. This is in accordance with Widiyanto, Mutamimah, & Hendar's (2011) study, which explains that Islamic micro financing has a positive and significant impact on the increase of cooperative farmers’ income through the difference in the average income of farmers.

Respondents’ incomes generally increase after financing in the cooperative. It can be seen that the income of respondents between before and after financing experienced a difference that generally increases. Respondents who experienced an increase in income after financing of 96.67% of the total respondents. This is an indication that Islamic micro finance is provided by the cooperative.
Table 1 Summary of Paired T-Test of Farmers Income

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std Dev</th>
<th>Std Error of Mean</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>ln Income Before Financed – ln Income After Financed</td>
<td>-0.429</td>
<td>0.5762</td>
<td>0.074</td>
<td>-4.08</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 2 Factors Affecting Average Revenue of Farmers Cooperative Partners

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>12.70970</td>
<td>0.0000</td>
</tr>
<tr>
<td>Ln Financing</td>
<td>0.146450</td>
<td>0.0033***</td>
</tr>
<tr>
<td>Duration as member</td>
<td>0.004329</td>
<td>0.0043***</td>
</tr>
<tr>
<td>Dummy Sex</td>
<td>0.108704</td>
<td>0.3616</td>
</tr>
<tr>
<td>Dummy Age</td>
<td>0.207734</td>
<td>0.1059</td>
</tr>
<tr>
<td>Dummy Distance</td>
<td>-0.318708</td>
<td>0.0509*</td>
</tr>
<tr>
<td>Dummy Education</td>
<td>0.671414</td>
<td>0.0022**</td>
</tr>
<tr>
<td>Dummy Moral Ethics</td>
<td>-0.235326</td>
<td>0.1848</td>
</tr>
<tr>
<td>R Squared 53.91%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R square Adj 47.70%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Description: Significant at the real level of 10% (*)
Significant at the real level of 5% (**)
Significant at the real level of 1% (***)

Factors that affect partner farmers income

The financing made by Al-Ittifaq Cooperative to Partner Farmers is a provider of capital requirement for partner farmers to run the farm. Through this research, Islamic micro financing conducted by cooperatives for partner farmers has a positive impact on the average income.

Ordinary Least Square Method (OLS) after going through Classical Assumption Test that is normality test, autocorrelation test, multicollinearity test, and homogeneity test

The result of data processing shows that the value of R squared from the equation is 53.91%, which means that 53.91% diversity of average income can be explained by each explanatory variable in the model, the rest is explained by other variables.

The amount of financing has a significant positive effect on the income earned by the farming family with the coefficient value of 0.146450 at the real level of 1%. This shows that financing significantly affect the income of farmer families with an average income increase of 0.146%, ceteris paribus. Therefore, the role of cooperative is very important in increasing the income of partner farmer’s family. It is in accordance with the opinion of Rahman (2010) that financing increases the income of micro business families. Capital is an important thing to increase the output to be generated by the perpetrators of micro business, so that the additional capital will be linear with the increase of output and revenue obtained by the perpetrators of micro
business.

Duration as member has positive and significant influence to the average income of partner farmer family with coefficient of 0.053729 at 1% real level. Thus, the duration of farmers as members that increase a year significantly affects the average income increase of 0.054%. This is in accordance with the research conducted by Rahman (2010), which reveals that long-time members of the cooperative will improve the business experience that is run as well as access to capital to run micro business actors.

Dummy of distance between respondents’ houses and cooperative has a positive influence on the income of partner farmers’ families. Partner farmers with a distance of less than 30 minutes or less than 10 Km from home to cooperative have higher average family income compared to partner farmers who have further houses with a coefficient of -0.318708 at a real level of 10% ceteris paribus. This indicates that the location of the cooperative adjacent to the house of micro business actors will be linear with the intensity of the financing application that will be taken by the financiers, so that the accumulation of capital taken by the respondents will be linear with the result of the business obtained by the respondents (Nawai & Mohd Shariff, 2012).

The educational variables have a positive and significant impact on the income of the farmers’ families on average with the coefficient of 0.671414 at the real level of 5%. Thus, higher education partner farmers (Junior High School, Senior High School, and University) get a higher average income of 0.67% compared to peer farmers who have lower education (elementary graduates), ceteris paribus. This is in accordance with research conducted by Riwaqanti (2013), which explains that micro business actors or farmers who have higher education will be better to manage their business. Therefore, the higher the level of education of partner farmers, the higher the income level of the family.

Conclusion

The respondent’s income before financing and after financing has a different average. The difference of respondents’ income is significantly different and it is found that the average income of respondents increases after receiving the financing.

While the amount of financing taken by the respondents have a positive and significant impact on the increase in farmer’s income partners supported by other variables such as long-time members of cooperatives, distance, and education partner farmers.

Poverty alleviation program has been conducted in many countries through microfinance programs. Providing financial services is expected to be able to help the needy in establishing or developing MEs in informal sector, and help them in enhancing the quality of life or setting free from poverty. However, it is deplorable, generally. The microfinance programs charging the exorbitant interest rate. Vividly this condition precisely creates burden to the poor. Therefore, it is important to provide alternative solution for them.

Other factors affecting the income of respondents such as education should be considered by policy makers to improve the level of education of respondents in an effort to increase the income of respondents. In addition, the duration variables become members of the cooperative for the respondent should be maintained, and the location of the cooperative close to the residence of the respondent should be maintained to increase the intensity of financing taken by the respondents.

Islamic cooperatives can maintain a financing scheme based on Qardhul Hasan and Murabahah in terms of capital provision for partner farmers as well as alternative to sell the harvests of partner farmers. Thus, the income of partner farmers is higher because of the relatively stable price of crops sold through supermarkets that become partners.

References


