

Investigating the Effect of the Utilization of Microcredit on Hardcore Poor Clients Household Income and Assets

Abdullah- Al- Mamun (Corresponding author)

Faculty of Management, Multimedia University, 63100 Cyberjaya, Malaysia

Tel: 60-16-215-7752 E-mail: mamun.freethinker@gmail.com

C. A. Malarvizhi

Faculty of Management, Multimedia University, 63100 Cyberjaya, Malaysia

Tel: 60-3-8312-5679 E-mail: malarvizhi@mmu.edu.my

Sazali Abdul Wahab

National Defense University of Malaysia, Kuala Lumpur, 57000, Malaysia

Tel: 60-3-9051-3060 E-mail: saw@upnm.edu.my

Mohammad Nurul Huda Mazumder

Faculty of Management, Multimedia University, 63100 Cyberjaya, Malaysia

Tel: 60-3-8312-5691 E-mail: mohammad@mmu.edu.my

Received: November 22, 2010 Accepted: February 8, 2011 doi:10.5539/ass.v7n7p141

Abstract

The objective of this study is to examine how Amanah Ikhtiar Malaysia (AIM)'s clients have been using the microcredit received and the effect of microcredit utilization on household income and asset. To obtain the above mentioned objectives, this study employed a cross sectional stratified random sampling method. Based on the literature review, it was found that there is a lack of studies to find out how AIM's hardcore poor clients were utilizing the microcredit they received. In addition, there is a paucity of literature which examines the effect of usage of loan on household income and asset. Findings of this study show that a relatively high percentage of old respondents used credit in trading activities and they engaged in self-employed production, trade and service activities more than new clients. Average monthly household income and market value of total household assets were also found to be higher for the respondents who used credit in income generating activities. Therefore, this study proposes that AIM should focus on the usage of credit in income generating activities by its clients. It is also recommended that AIM should review and re-structure the existing policies to increase the employment rate and income generating opportunities of client's household members. This can be done by providing appropriate training, diversifying the loan program and offering loan for non-income generating activities.

Keywords: Microcredit, Employment, Hardcore poor, Amanah Ikhtiar Malaysia

1. Introduction

Economists have long agreed that access to finance plays an important role in reducing inequality in income distribution and enhancing household income and employment of poor and hardcore poor households all over the world. The poor and hardcore poor households are trapped in chronic deprivation due to the combination of poor health, poor education, broken families, cruel resource distribution, inadequate infrastructure, varied forms of exclusion and scarce employment opportunities. These characteristics show that hardcore poor households lack the necessary resources that can be used to lift them out of the state of chronic deprivation (Matin and Begum, 2002). Commercial banks in most developing countries exclude these poor and hardcore poor by imposing strict rules and regulations. The demand for the products and services offered by commercial banks are low among the poor, not because of the reason that '*poor do not need financial services*' but because the product and service are

not designed to meet their requirements. Microcredit was originally established to bridge the capital gap apparently unfilled by the rural cooperatives and commercial banks. It is a collection of banking practices built to provide small loans and accept small saving deposits. According to Otero (1999), microcredit provides access to productive capital that enables the poor self-employed to create productive capital, to protect the capital obtained, to deal with risk and to avoid the loss of capital. It attempts to build assets and create wealth among poor and hardcore poor people.

The beginning of microcredit in Bangladesh is one of the most important innovations in the development policy in last fifty years (Guttman, 2007). The most famous and successful microcredit methodology was started as an action research project, launched in 1976 by Professor Mohammad Yunus in Bangladesh. The result was the establishment of the Grameen Bank, which extended credit and banking facilities to the poor in Bangladesh and many other countries (Uotila, 2005). Grameen banks microcredit model was replicated by many other NGOs (non-government organization) around the world, and Amanah Ikhtiar Malaysia (AIM) is no exception. AIM began its operation as an applied research project and was later institutionalized as a registered private trust in 1987. AIM selects their clients based on clients' gross average monthly household income using the poverty line income (PLI) concept. PLI has been calculated by the Malaysian government since 1976 and it is estimated based on expenses on necessities such as food and other basic needs. Households with gross monthly household income below PLI would be considered as absolute poor, while households with gross monthly household income below half of PLI would be categorized as hardcore poor. AIM only selects households whose gross monthly household income falls below the PLI, which includes both poor and hardcore poor households.

In assisting the poor (including the hardcore poor), AIM provides small amount of credit without any collateral and no legal action is enforced if the borrowers fail to settle their payments. AIM's microcredit approach is based on small repayment system to be paid on weekly basis during center meetings. Although the primary objective of AIM's microcredit scheme is to provide loans for income generating activities (namely I-Mesra loan, I-Srikandi loan and I-Wibawa loan), AIM also provides loans for other activities such as recovery loan (I-Penyayang), education loan (I-Bistari) and housing/multipurpose loan (I-Sejahtera). As of March 2010, AIM has outreached 87 branches in eight states. There are 60497 groups in 6646 centers, currently serving a total of 254116 clients. AIM provides financial services to 82 percent of the total poor and hardcore poor households in Malaysia with more than 99 percent repayment rate (AIM, 2010).

2. Literature Review on the Use and Impact of Microcredit

Nearly three billion poor people around the world do not have access to the basic financial services (Abed, 2000). Microcredit is a "small scale financial service – primarily credit and savings – provided to people who farm, fish or herd" as defined by Robinson (2001). The most common financial services offered by microfinance organizations (MFO) includes savings, microcredit, payment and transfer services, and insurance. Microcredit service is commonly provided by NGOs, savings and credit cooperatives, private and state owned banks, postal banks, members owned community organizations, non-bank intermediaries, such as finance or insurance companies, and other financial organizations.

Snodgrass and Sebstad (2002) noted that microcredit reduces vulnerability by helping micro-entrepreneurs diversify their sources of household income, increase their savings, expand their options for credit, and improve household money management. However, the level of impact of microcredit on borrower's economic wellbeing depends on how they use the credit. Study conducted by Hulme and Mosley (1996) mentioned that client received higher economic benefit by using credit for capital deepening, which increases their expectations of income and risk. And, clients receiving lower socio-economic benefits commonly use credit for capital widening, which involves unchanged risks and income, or even reduction of risks and vulnerability. Buvinic et al. (1989) asserted that women use credit to increase efficiency and productivity, rather than to grow. Dunn and Arbuckle (2001) found that many respondents use credit to meet both household and enterprise needs and they use a range of formal and informal financial tools to meet their short- and long-term household and enterprise goals. The study conducted by Lodhi, Luqman, Javed and Asif (2006) noted that about 15% of the households used credit for personal expenses, 26.7% used credit for family expenses, 8.3% used credit for social purpose, 11.7% save credit for hard days and only 38.3% clients used credit for economic activities.

The group based microcredit program provides small amount of credit for working capital, training and improving social bonding among the poor and hardcore poor households, which all together contributes to both self and wage employment (Neill et al., 1994; Khandker and Chowdhury, 1995; Khandker, Samad and Khan, 1998; Rosintan and Cloud, 1999; Latifee, 2003; Dunn, 2005; and Panda, 2009). As mentioned by Rosintan and Cloud (1999) poor and hardcore poor women all over the world, with access to productive capital offered by

MFO's (Microfinance Organizations) created their own employment in small scale agriculture and dairying, food processing and sales, beer brewing, midwifery, crafts, services, and petty trading. Because of the importance of self and wage employment, the government and non-government organizations focused on intermediary programs like microcredit programs to provide small scale working capital and training to the poor and hardcore poor households, who needed the service most. The first comprehensive impact study conducted by Hossain (1988) noted that the most direct effect of microcredit has been on the accumulation of capital by the poor. The amount of working capital employed by clients' enterprises was increased by an average of three times within a period of 27 months. The investment in fixed assets was about 2.5 times higher for borrowers with more than three years' membership than for those who joined during the year of the survey. Hossain (1988) also pointed out that about one third of the members were unemployed before they joined microfinance program and with loans, these members became involved in self-employment activities. Involvement in self employed activities increases the number of sources of income for the households which increase their ability to deal with crisis and reduce repayment problem.

In their impact study Neill et al. (1994) noticed a 22 percent increase in employment rate among K-REP clients in Kenya. Khandker and Chowdhury (1995) conducted a study on Grameen bank's clients in Bangladesh and they noted that increase in self-employment among the poor with access to credit had resulted in an increase in rural wages. Khandker, Samad and Khan (1998) stressed that microcredit program has positive impact on income, production and employment particularly in rural non-formal sector. Latifee (2003) in his study on Grameen Banks clients mentioned that participation in microcredit program reduced unemployment rate among clients, and made a positive contribution to their standard of living. The Study by Dunn and Arbuckle (2001) in Peru found that there was on average of nine days extra employment per month, and approximately 40,000 clients have over 4.3 million workdays per year which was equivalent to 17,414 full-time jobs, of which 6,259 were paid positions for non-household members. An impact study conducted by Dunn (2005) in Bosnia and Herzegovina also found a positive impact of microcredit on respondents and their household income, employment, business investment, business registration and post-war transition. A study conducted in India by Panda (2009) noted a significant increase in borrowers household income (11.41 percent), households' asset position was 9.75 percent higher than non-participants and the savings increased by 42.53 percent. This study also found an increase in annual employment days among the clients.

The impact of AIM's microcredit schemes follows a similar pattern, as it does for other microfinance organizations all over the world. The first internal impact study conducted by Gibbons and Kasim (1990) discovered a significant increase in client's monthly household income from an average of Ringgit Malaysia (RM) 142 per month prior to participation to RM220, a 55% (use percent) increase in monthly household income after participation. The overall repayment rate was 78%, which was much lower than cumulative repayment rate achieved by Grameen Bank (97%-98%) and the target repayment rate set by project Ikhtiar (90%). However, among the women borrowers, the repayment rate was 95%. The Second Internal Impact Study (1990), showed further overall improvement among participating households. Around 98% of them experienced an increase in household income compared to 70% in the first study. The pilot branch recorded an 88% increase in household income compared to the previous study where newer branches recorded only 56% increase. The overall increase was 77% compared to 45% previously, with an average increase of RM4668 per year or RM391 per month. The per capita monthly income also increased from RM40 to RM73. The findings echoed the earlier study.

In mid-1990, the Malaysian government initiated an impact assessment study on AIM's microcredit schemes by a team from the Social Science and Economic Research Unit (SERU) of the Prime Ministers Department. Findings from SERU (1990) impact study reconfirmed the findings of first two impact studies. This study noted that the overall household income was more than double, from RM197.78 per month to RM465.66 per month after participating in AIM's microcredit schemes. SERU (1990) also measured the impact on quality of life, by analyzing the ownership and quality of housing, type and quality of household assets, improvement in agricultural land and savings. Increase in household income enabled the participants to improve their housing conditions. Household savings increased from an average of RM33.11 to RM211.25. The increase in household income also facilitated an increase in expenditure on food, nutrition, education and reinvestment. As for cost effectiveness, with an operating cost of RM7056, AIM managed to release 249 poor families from poverty.

The Third Internal Impact Study (1994) reconfirmed the trends in non-monetary impact of microcredit on poor household of the earlier studies. This study showed an improvement in the owner occupied house to 85% compared to 80% prior to participating in AIM's microcredit schemes. The use of electric household products also showed some slight improvements. On the perception of nutritional quality, 58% felt there was an improvement, 34% felt no change and the remainder were not sure about the change in nutritional quality. This

study also showed that there is a 13% increase in household income from an average of RM309 per month to RM532 compared to RM223 before participation. This study found a direct positive relationship between level of income and utilization of loans, the more loans being utilized, the higher the income. Findings from Salma (2004) showed that the household income, expenditure, savings and assets increased for AIM participants. Salma (2004) therefore concluded that the microcredit program has direct and higher contribution to generate income than non-microcredit program.

Despite positive impacts of microcredit, many clients reported that they are unable to use the loan in income generating activities due to severe poverty, illness of family members, educational needs of the children, unemployment of income generating household members, disaster and some other needs (Haque and Itohara, 2009). These poor and hardcore poor households commonly have little or no land, little education, no specialized skills and almost zero working capital. With low capital and no specialized skills, these businesses are operating in areas of low entry requirements and high competition. These cause them to experience low productivity and unable to improve their socio-economic status. As mentioned by Snodgrass and Sebstad (2002), the benefits that people gain from borrowing and saving money depend on the uses they can make of these funds. Households' ability to grasp income generating opportunities is not the same among all level of poor. Clients' ability to use credit in income generating activities ultimately set the level of socio-economic benefits they received after participation. The Consultative Group to Assist the Poor (2006) mentioned that, "widespread experience with microcredit has found that it can even harm the poor who do not have capacity to absorb debt." Although many MFO's often talk about pro-poor development strategy, many researchers showed that moderate poor not the hardcore poor are receiving the service and enjoying the benefits of microcredit.

Usage of loan in non-income generating activities can even harm hardcore poor vulnerable households. Even though AIM is not obliged to take any legal action if the borrower fails to repay, the social obligation and group pressure is still there. Clients therefore have to pay the debt by selling assets or borrow from others, which just make a bad situation worse. Moreover, if borrowers have to sell productive assets to repay the debt it may also lead to a decline in their household income. It is therefore, important to investigate how respondents use the loan they receive from AIM and how utilization of the loan affects household income and assets.

3. Research Hypothesis

The conceptual model of impact chain presents a complex set of links as each 'effect' becomes a 'cause' in its own right generating further effects (Hulme, 1997). One of the most complex conceptual models for impact assessment was presented by Chen and Dunn (1996), called household economic portfolio model (HHEP). The main advantages of HHEP model is that, it helps in the formation of research design and hypothesis. The researchers from 'Project AIM' confirmed the usefulness of HHEP model in addressing the fungibility and attribution issues. Both HHEP model developed by Chen and Dunn (1996) and modified HHEP model by Uotila (2005) has some implications for microfinance impact analysis. The research hypothesis of this study is based on the implications of these two models. In this research, hypotheses were used to test only a portion of the implications given by the model. The objective of this study is to measure how Amanah Ikhtiar Malaysia's hardcore poor clients use the received credit and how the usage of credit affects household income and assets in Peninsular Malaysia. Based on the research objective, the following specific hypotheses are investigated:

- a. Hypothesis 1 (H_1): Change in economic activity or not after the respondents received credit from AIM is associated with the respondent's status – new and old. It is expected that old respondents are more likely to choose self-employed economic activities than others.
- b. Hypothesis 2 (H_2): Households main economic activity is associated with respondent participation status – new and old. It is expected that a high percentage of old respondents who are self-employed encountered less repayment problem.
- c. Hypothesis 3 (H_3): Participation in Amanah Ikhtiar Malaysia's microcredit program leads to an increase in number of sources of income. Since AIM provide small amount of collateral free credit as a working capital, it is expected that respondents who participate for a longer period and receiving higher amount of credit, their mean number of sources of income are significantly higher than that of others.
- d. Hypothesis 4 (H_4): Usage of microcredit in income generating activities leads to an increase in household income. Clients who used credit for income generating activities are expected to have higher household income.

- e. Hypothesis 5 (H₅): Usage of microcredit in income generating activities leads to an increase in household assets. Clients who used credit in income generating activities are expected to have higher household assets.

4. Research Design

This research employs a cross-sectional design where the sampling scheme used is stratified random sampling; samples are selected from three different geographic areas from three states namely Kedah, Kelantan and Terengganu in Peninsular Malaysia. These three states are randomly selected from the bottom six states (poverty rate were relatively higher in these six states) of Peninsular Malaysia. AIM offers financial services to the poor and hardcore poor households through a total of 28 branches in the three selected states. Most of these branches are located in very small towns or rural areas, as the poverty rate in isolated rural areas are expected to be much higher than urban areas. Among these 28 branches, three branches were randomly selected. The selected three branches are Baling from Kedah, Pasir Puteh from Kelantan and Setiu from Terengganu. Data were collected from these three branches.

The sampling methodology was designed to compare two groups of clients, where both groups were selected from AIM client base. Therefore, instead of external control group, this study selected new clients (number of months as clients was less than 24 months) as control group and old clients (number of months as clients were between 48 months to 72 months) as treatment group based on the number of months they participated with AIM. All the clients were first selected based on number of months they remained as clients and then selected again based on pre-AIM household income. Clients with pre-AIM household income below half of the joining years PLI were considered as hardcore poor clients. 2779 clients participated in this program in all three branches for the study period. Among them, a total of 505 clients or 18% of the 2779 clients were hardcore poor and among these 505 clients, 22 clients or 4.36% clients dropped out from the program. Data were collected from AIM's client's record book. Data on 483 hardcore poor new and old clients' included current unpaid debt, pre-AIM household income, joining date, total amount of clients saved in AIM, total amount of credit received from each scheme and the total amount of credit received.

In the second stage of data collection, the researcher explained the purpose of this study to the clients and requested their permission to interview them. Among the 483 clients, 386 clients agreed to be interviewed after their weekly center meeting, of whom 184 were old clients and 202 were new clients. Among the 386 clients, 45 clients mentioned that they received credit from other sources after they joined AIM's microcredit program, and 8 clients did not answer all the questions because of personal reasons. Clients who received credit from other sources and also those who did not answer all the questions were excluded from the study and complete data were collected from the remaining 333 hardcore poor clients, among them 161 were old clients and 172 were new clients.

In the data analysis, both the Shapiro-Wilk's test for normality and Levene's test for homogeneity of variance were performed prior to the test of the first research hypothesis. Since the assumptions were not satisfied, this study therefore used the non-parametric Mann-Whitney test to test the mean difference. The Pearson's chi-square test was used to test whether usage of loan is associated with respondents' repayment performance.

5. Research Findings

5.1 Usage of Loan

As shown in Table 1, out of a total of 333 respondents, 182 respondents or 54.65% mentioned that they used the total amount of loans on income generating activities. However, about 45% total respondents mentioned that they used at least a part of the loans they received from AIM on non-income generating activities. Among the new sampled clients, more than 60.47% used total amount of loans on income generating activities; whereas only 48.45% old respondents used total amount of loans on income generating activities.

The types of activities that the respondents and their household members invested the credit they received from AIM's microcredit schemes are presented in the Table 2. It shows that 36.04% used credit on trade or retail activities, 22.82% respondents used credit on agricultural or fishing activities, 11.41% respondents used credit on manufacturing activities and 7.8% respondents used credit on service activities.

To understand precisely how respondents used the credit they received from AIM, respondents were asked about how or in which income generating activities they invested the loans. Respondents were asked to select multiple answers as appropriate. As shown in Table 3, 122 out of total 333 respondents or 36.64% of the total respondents mentioned that they used the loans to purchase goods for sale. 29.73% respondents mentioned that they used credit to purchase supply or raw materials for their business. Only 34 respondents or 10.20% of total respondents

used credit to purchase tools or small equipments; 7 respondents or 2.10% used credit to rent land or business site and only 5 respondents or 1.50% used credit to purchase land or business site. However, 83 respondents or about 25% of the total respondents reported that they used credit to purchase livestock and 10.81% of the total respondents used credit to improve business facilities. A relatively high percentage of old respondents used credit to purchase goods for selling, raw materials, tools or small equipment and to improve the business facilities. A relatively high percentage of new respondents used credit to purchase livestock and invest the money in other activities.

As mentioned before, 44.75% of the total respondents used at least part of the total loan they received from AIM on non-income generating activities. This study therefore attempts to find out in what non-income generating activities respondents invest the microcredit they received from AIM.

As presented in Table 4 (respondents were allowed to select multiple answers), 18.92% of the total respondents used loans to purchase food for the household, 10.81% bought clothes; 27.93% paid for health expense, 24.72% respondents used credit to pay schooling expenses for their children while 36.04% respondents used the credit to improve their house or land and 12.61% of the total respondents mentioned that they kept 'money on hand' to repay the debt or for emergency. However, only 4 (1.20%) out of 333 respondents reported that they used credit to pay for marriage expenses, 2 (0.60%) respondents reported that they used credit to give or loan money to others and 2 (0.60%) respondents mentioned that they used credit to repay other debts. Compared to new respondents, a relatively higher percentage of old respondents used AIM's microcredit to pay health expenses, schooling expenses and housing and land improvements. On the other hand, a relatively high percentage of new respondents used credit to buy food and clothes, and kept money in hand to repay loans or for emergency.

5.2 Testing Hypothesis 1

As presented in Table 5, of the total 333 respondents, 37.2% of the respondents started new economic activities or changed economic activities or started new seasonal economic activities after they received credit from AIM. The percentage of respondent's households who started or changed economic activities is 48.40% for old respondents and 26.70% for the new respondents. The p -value for Pearson's chi-square test is less than 0.05 indicating that whether there is a change in economic activity or not after the respondents received credit from AIM is associated with the respondent's status – new and old. As shown in Table 5, a higher percentage of old respondents started or changed economic activities compared to new respondents. Participation of AIM's microcredit program therefore enabled respondent's households to start new economic activities or change economic activities.

This study also intends to investigate why respondents started or changed economic activities. Among the total 124 respondents, who started or changed economic activities after receiving credit from AIM, 11.4% of the respondents started or changed economic activities because they had better earning opportunities. Among these 38 respondents 15 of them are new respondents and 23 of them are old respondents. However, as shown in Table 6, 84 out of 124 respondents, who started or changed economic activities after receiving credit from AIM, 84 of them mentioned that they started or changed economic activities after acquiring enough capital.

5.3 Testing Hypothesis 2

As presented in Table 7, in terms of respondents 'households main economic activity', out of 333 households, 67 households (20.2%) main economic activity is self-employed production, 106 households (31.6%) main household economic activity is self-employed trade, and only 32 households (9.6%) reported that their main household economic activity is self employed service. 73 out of 333 households (22%) reported that their main economic activity is working for wages. It is noted that 55 out of 333 households (16.6%) reported their main household economic activity is salaried work. The p -value for Pearson's chi-square test is less than the chosen α level of 0.05, indicating that household's main economic activity is associated with respondent's status – old respondents and new respondents. As shown in Table 7, old respondents are more likely to choose self employed economic activities like trade and services as their households main economic activity and less likely to work for others.

5.4 Testing Hypothesis 3

Number of sources of income was expected to increase with participation in AIM's microcredit program. The mean and standard deviation of number of sources of income among new, old and all respondents are presented in Table 8. Moreover, as per Table 8, among the total 333 households, 254 households or 76.28% of the total respondent's households have only one source of income and 22.52% households have two sources of income. Only 4 out of 333 households have more than two sources of income.

At the overall level, the mean number of sources of income is 1.26 with a standard deviation of 0.521. The minimum number of sources of income is 1 and the maximum is 5 (or 4). Among the new respondents, the mean number of sources of income is 1.18 with a standard deviation of 0.504, whereas for the old respondents the mean and standard deviation is 1.35 and 0.528 respectively. The p -value for Shapiro-Wilk test of normality is 0.000 portraying that the normality assumption is violated. However, the p -value for Levene's test is 0.000, indicating that the variability for the 'number of sources of income' among new and old respondents households are statistically significant. Since the normality assumption is violated, a non-parametric Mann-Whitney test was conducted. The p -value for Mann-Whitney test is 0.000, which is less than the chosen α level of 0.05 indicating a significant difference in the mean number of sources of income among new and old respondents. The mean number of sources of income among old respondent's households is significantly higher than that of new respondent's households.

5.5 Testing Hypothesis 4

Both old and new respondents who used credit in income generating activities is expected to have higher household income than respondents who used part of their credit in non-income generating activities. As presented in Table 9, among the new respondents, who used credit in income generating activities, their mean monthly household income is RM587.69 with a standard deviation of 351.42, whereas among new respondents who used credit in non-income generating activities, the mean and standard deviation is RM475.51 and 123.75 respectively.

The p -value for Shapiro-Wilk test of normality is 0.000, which indicates that the normality assumption is violated. However, the p -value for Levene's test is 0.004, indicating that the variability for the 'household income' among respondents households are statistically significant. Since the normality assumption is violated, a non-parametric Mann-Whitney test was conducted. The p -value for Mann-Whitney test is 0.009 which is less than the chosen α level of 0.05 indicating a significant difference in the mean household income of new respondents who used credit in income generating activities compared to those who did not. Among the new respondents those who used the credit in income generating activities, their average monthly household income is significantly higher than that of others. Usage of loan in income generating activities therefore leads to an increase in household income among the new respondents in Peninsular Malaysia.

Moreover, among the old respondents who used credit in income generating activities, their mean monthly household income is RM1141.90 with a standard deviation of 603.38. On the other hand, for old respondents who used credit in non-income generating activities, the mean and standard deviation is RM1020.78 and 609.15 respectively. The p -value for Shapiro-Wilk test of normality is 0.000 indicating that the normality assumption is violated. However, the p -value for Levene's test is 0.297 which shows that the variability for the 'household income' among respondents' households is not statistically significant. Since the normality assumption is violated, a non-parametric Mann-Whitney test was conducted. The p -value for Mann-Whitney test is 0.181 which is more than the chosen α level of 0.05 reflecting an insignificant difference in the mean household income among old respondents who used credit on income generating activities and those who did not. Data do not provide enough evidence to conclude that usage of loan in income generating activities therefore leads to an increase in household income among the old respondents in Peninsular Malaysia.

5.6 Testing Hypothesis 5

Both old and new respondents who used credit in income generating activities is expected to have higher household income than respondents who used part of their credit in non-income generating activities. As presented in Table 9, among the new respondents, who used credit in income generating activities, the approximate market value of their household assets is RM30500 with a standard deviation of 18990. In contrast, among new respondents those who used credit in non-income generating activities, the mean and standard deviation is RM22900 and 13450 respectively. The p -value for Shapiro-Wilk test of normality is 0.000 indicating that the normality assumption is violated. However, the p -value for Levene's test is 0.011 indicating that the variability for the 'household assets' among respondents is statistically significant at 5% level. Since the normality assumption is violated, a non-parametric Mann-Whitney test was then conducted. The p -value for Mann-Whitney test is 0.008 which is less than the chosen α level of 0.05 demonstrating a significant difference in the mean market value of household assets owned by new respondents who used credit in income generating activities against those who did not. Among the new respondents those who used the credit in income generating activities, total market value of their household assets is significantly higher than that of others. Therefore, it can be concluded that usage of loan in income generating activities leads to an increase in household assets among the new respondents in Peninsular Malaysia.

Moreover, among the old respondents, who used credit in income generating activities, approximate market value of their household assets is RM55000 with a standard deviation of 28010. On the opposite side, among old respondents those who used credit in non-income generating activities, the mean and standard deviation are RM45200 and 23420 respectively. The p -value for Shapiro-Wilk test of normality is 0.000 signifying that the normality assumption is violated. However, the p -value for Levene's test is 0.061 indicating the variability for the 'household assets' among respondents is not statistically significant at 5% level. Since the normality assumption is violated, a non-parametric Mann-Whitney test was conducted. The p -value for Mann-Whitney test is found to be 0.026 which is less than the chosen α level of 0.05 indicating a significant difference in the mean market value of household assets owned by old respondents who used credit income generating activities against those who did not. Among the new respondents those who used the credit in income generating activities, the total market value of their household assets is significantly higher than that of others. This study thus concludes that usage of loan in income generating activities leads to an increase in household assets among the old respondents in Peninsular Malaysia.

6. Conclusion and Recommendations

Microcredit organizations all over the world provide small amount of working capital to improve poor and hardcore poor households' abilities to take advantage of income generating opportunities. It is obvious that the self-employed poor commonly have no specialized skills and operate their business in arenas with low entry barrier and high competition. Following the Grameen Banks' group based microcredit model, Amanah Ikhtiar Malaysia (AIM) also provides training to its clients in order to improve money management skills as well as enable their clients to take advantage of income and employment generating opportunities. The weekly meeting among the clients and officials also improve the social bonding among clients that helps increase income and employment generating opportunities among client's household members.

Findings of this study show that 44.75% of the total respondents used credit in non-income generating activities. A relatively high percentage of old respondents compared to new respondents, use credit for trading activities such as buying goods to sell to their customers, buying other inputs for business, and buying equipment to improve business facilities. Respondents who did not use credit onn income generating activities commonly use credit to pay for health expenses, schooling expenses and improvement of house or land. Findings also show that 25% of total respondents started or changed economic activities after acquiring enough capital from AIM's microcredit programs. Moreover a there is a relatively higher percentage of old respondents compared to new respondents who are engaged in self-employed production, self-employed trade and self-employed service activities. The mean number of sources of income among old respondents' households is significantly higher than that of new respondents. The mean amount of household income among new respondents who used credit in income generating activities is significantly higher than those who did not. The mean market value of household assets owned by both new and old respondents' households are also significantly higher among those who used credit in income generating activities compared to those who did not. In order to improve the socio-economic condition of the hardcore poor households during the development process, AIM should, therefore, focus on designing a flexible credit policy and conducting appropriate training and development programs for the efficient use of provided credit to its clients.

References

- Abed, H. F. (2000). *Microfinance NGOs in Bangladesh: Growth, impact and challenges*. Paper presented at the Asian Regional Conference jointly organized by INASIA and CDF on "The Potential and Limitations of Economic Initiatives in Grassroots Development – Current Issues and Asian Experiences", 27th to 30th November, 2000, Rajendrapur, Bangladesh.
- AIM. (2010). *About Amanah Ikhtiar Malaysia*. [Online] Available: <http://www.aim.gov.my> (December, 09, 2010).
- Buvinic, M., Marguerite B. and Cecelia J. (1989). Impact of a Credit Project for Women and Men Microentrepreneurs in Quito, Ecuador. In *Women's Ventures*, edited by Marguerite B. and Buvinic, M., 222-246. West Hartford CT: Kumarian Press.
- Chen, M.A. and E. Dunn. (1996). *Household Economic Portfolios*. AIMS Project. Washington, D.C.: Management Systems International.
- Consultative Group to Assist the Poor. (2006). *Good Practice Guidelines for Funders of Microfinance*. [Online] Available: <http://www.cgap.org/p/site/c/template.rc/1.9.2746/> (December, 11, 2007).

- Dunn, E. (2005). *Impact of Microcredit on Clients in Bosnia and Herzegovina*, Presented to Foundation for Sustainable Development of the Federation of Bosnia and Herzegovina and Republika Srpska Development and Employment Foundation.
- Dunn, E. and Arbuckle, J. G. Jr. (2001). *The impacts of Microcredit: A Case Study from Peru*. Assessing the Impact of Microenterprise Services (AIMS), Management Systems International, Washington, D.C.
- Gibbons, D. S. and Kasim, S. (1990). *Banking on the Rural Poor*. Center for Policy Research, University Science Malaysia, Malaysia.
- Guttman M.J. (2007). *Repayment Performance in Microcredit Programs: Theory and Evidence*. Working Paper-11, Networks Financial Institute, Indiana State University. USA.
- Hoque, M. and Itohara, Y. (2009). Women Empowerment through Participation in Micro-Credit Programme: A Case Study from Bangladesh. *Journal of Social Sciences*, Vol. 5(3), pp. 244-250.
- Hossain, M. (1998). *Credit for the Alleviation of Rural Poverty: The Grameen Bank in Bangladesh*. Research Report No. 55, IFPRI, Washington, D.C.
- Hulme, D. (1997). *Impact Assessment Methodologies for Microfinance: A Review*. Consultative Group to Assist the Poor, The World Bank Washington DC.
- Hulme, D. and P. Mosley. (1996). *Finance Against Poverty, Volume I: Analysis and Recommendations*. London: Routledge (draft).
- Khandker, S. R., Samad, A. H. and Khan, H. Z. (1998). Income and Employment Effects of Micro-credit Programmes: Village-level Evidence from Bangladesh. *The Journal of Development Studies*, Vol. 35, No. 2, pp.96-124.
- Khandker, S.R. and O.H. Chowdhury. (1995). *Targeted Credit Programs and Rural Poverty in Bangladesh*. Washington, W.C.: World Bank.
- Latifee, H. I. (2003). *Microcredit and Poverty Reduction*. International Conference on Poverty Reduction through Microcredit. Taksim-Istambul, June 09-10, 2003.
- Lodhi, T. E., Luqman, M., Javed A and Asif, M. (2006). Utilization of Micro-credit by the Female Community: A Case Study of Azad Jammu and Kashmir (Pakistan). *International Journal Of Agriculture & Biology*, 1560-8530/2006/08-2-175-177; 2006.
- Matin, I. & Begum, A. S. (2003). *Asset-ing the Extreme Poor: Experiences and Lessons from a BRAC Project*. Research and Evaluation Division, Bangladesh Rural Development Committee, Dhaka, Bangladesh.
- Neill, C., Davalos, M. Kiiru, W., Manundu, M., and Sebstad, J. (1994). *The Kenya Rural Enterprise Programme under Cooperative Agreement*. No. AID-615-0238-A-00-7026-00: A Final Evaluation” GEMINI Technical Report No. 77. Bethesda, MD.
- Otero, M. (1999). Bringing Development back into Microfinance. *Journal of Microfinance*, Vol-1, Issue-1.
- Panda K. D. (2009). Participation in the Group Based Microfinance and its Impact on Rural Households: A Quasiexperimental Evidence from an Indian State. *Global Journal of Finance and Management*, Vol. 1, No. 2, pp. 171-183.
- Robinson M. (2001). *The Microfinance Revolution: Sustainable Finance for the Poor*. International Bank for Reconstruction and Development/The World Bank Washington D.C.
- Rosintan D. M. P. D., and Cloud K. (1999). Gender, self-employment and microcredit programs: An Indonesian case study. *The Quarterly Review of Economics and Finance*, Vol. 39, pp. 769-779.
- Salma M. (2004). *A Comparative Case Study on Outreach and Impact of Ikhtiar Loan Scheme and Special Program for Hardcore Poor in Seberang Perai Pulau Pinang*. University Sains Malaysia.
- Second Internal Impact Study. (1990). *Impact Assessment Report*. Research and Development Unit, Amanah Ikhtiar Malaysia.
- SERU. (1990). *Impact Assessment Report*. Research and Development Unit, Amanah Ikhtiar Malaysia.
- Snodgrass, D.R. and Sebstad, J. (2002). *Client in Context: The Impact of Microfinance in three countries*. Consultative Group to Assist the Poor, Washington DC: Management Systems International.
- Third Internal Impact Study. (1994). *Third Impact Study*. Research and Development Unit, Amanah Ikhtiar Malaysia.

Uotila, A. (2005). *Livelihood Impact of Microfinance access for the Poor: The Case of Vision FINCA Rwanda*. The University of Guelph, Canada.

Table 1. Uses of Loan in Income Generating Activities

		New Respondents	Old Respondents	Total Respondents
Yes	Count	104	78	182
	%	60.47%	48.45%	54.65%
No	Count	66	83	149
	%	38.37%	51.55%	44.75%
Don't Know	Count	2	0	2
	%	1.16%	0.00%	0.60%

Table 2. Types of Economic Activities Respondents Used Credit

		New Respondents	Old Respondents	Total Respondents
No Answer	Count	45	19	64
	%	26.16%	11.80%	19.22%
Trade or Retail	Count	48	72	120
	%	27.91%	44.72%	36.04%
Manufacturing	Count	20	18	38
	%	11.63%	11.18%	11.41%
Service	Count	8	18	26
	%	4.65%	11.18%	7.81%
Agricultural / Fishing	Count	44	32	76
	%	25.58%	19.88%	22.82%
Others	Count	7	2	9
	%	4.07%	1.24%	2.70%

Table 3. The Activities Respondents Used Credit

		New Respondents	Old Respondents	Total Respondents
Bought goods for sell	Count	50	72	122
	%	29.07%	44.72%	36.64%
Bought supply or inputs for business	Count	41	58	99
	%	23.84%	36.02%	29.73%
Purchase tools or small equipment	Count	15	19	34
	%	8.72%	11.80%	10.21%
Purchase livestock	Count	48	35	83
	%	27.91%	21.74%	24.92%
Rented tools or equipments	Count	2	1	3
	%	1.16%	0.62%	0.90%
Rented land or business site	Count	0	7	7
	%	0.00%	4.35%	2.10%
Purchase land or business site	Count	0	5	5
	%	0.00%	3.11%	1.50%
Improve business facilities	Count	7	29	36
	%	4.07%	18.01%	10.81%
Others	Count	39	16	55
	%	22.67%	9.94%	16.52%

Table 4. Uses of Loan into Non-Income Generating Activities

		New Respondents	Old Respondents	Total Respondents
No Answer	Count	88	50	138
	%	51.16%	31.06%	41.44%
Buy Food for Household	Count	38	25	63
	%	22.09%	15.53%	18.92%
Buy Cloths for Households	Count	23	13	36
	%	13.37%	8.07%	10.81%
Pay for Health Expenses	Count	45	48	93
	%	26.16%	29.81%	27.93%
Pay for Schooling Expenses	Count	32	47	79
	%	18.60%	29.19%	23.72%
Housing / Land Improvement	Count	42	78	120
	%	24.42%	48.45%	36.04%
Pay for Marriage Expenses	Count	4	0	4
	%	2.33%	0.00%	1.20%
Give or Loan Money to Others	Count	1	1	2
	%	0.58%	0.62%	0.60%
Money on Hand for Repay or Emergency	Count	24	18	42
	%	13.95%	11.18%	12.61%
Repay other Debt	Count	2	0	2
	%	1.16%	0.00%	0.60%

Table 5. New or Changed Economic Activities by New and Old Respondents

		New Respondents	Old Respondents	Total Respondents
Started or changed economic activities	Count	46	78	124
	%	26.7%	48.4%	37.2%
Did not started or changed economic activities	Count	126	83	209
	%	73.3%	51.6%	62.8%
Pearson Chi-Square test, $r = 16.760$, $df = 1$, $p\text{-value} = 0.000 < 0.05$				

Table 6. Reasons for Starting/Changing Economic Activities

Reasons		New Respondents	Old Respondents	Total Respondents
Better earning opportunities	Count	15	23	38
	%	8.7%	14.3%	11.4%
Acquired enough capital	Count	31	53	84
	%	18.0%	32.9%	25.2%

Table 7. Households Main Economic Activity

Economic Activity	New Respondents		Old Respondents		Total Respondents	
	Count	%	Count	%	Count	%
Self-Employed Production	35	20.3%	32	20.0%	67	20.2%
Self-Employed Trade	45	26.2%	60	37.5%	106	31.6%
Self-Employed Service	9	5.2%	23	14.4%	32	9.6%
Wage Work	41	23.8%	32	20.0%	73	22.0%
Salaried Work	42	24.4%	13	8.1%	55	16.6%
Total	172	100%	161	100%	333	100%
Pearson Chi-Square test, Asymp. Sig (2-sided) = 0.000						

Table 8. Number of Sources of Income

Number of Sources of Income	New Respondents		Old Respondents		Total Respondents	
	Count	%	Count	%	Count	%
1	146	84.88%	108	67.08%	254	76.28%
2	24	13.95%	51	31.68%	75	22.52%
>2	2	1.16%	2	1.24%	4	1.20%
N	172	100%	161	100%	333	100%
Mean	1.18		1.35		1.26	
Standard Deviation	0.504		0.528		0.521	
Shapiro-Wilk test, p -value = 0.00; Levene's test, p -value = 0.00						
Mann-Whitney Test, Asymp. Sig. (2-tailed) = 0.000<0.05						

Table 9. Usage of Loan, Household Income and Asset

Used Loan in:	New Respondents		Old Respondents	
	Income Generating Activities	Also Used in Other Activities	Income Generating Activities	Also Used in Other Activities
N	104	68	78	83
Mean Household Income (RM)	587.69	475.51	1141.90	1020.78
Std Deviation, Household Income	351.42	123.75	603.38	609.15
Shapiro-Wilk Test of Normality	p -value = 0.000		p -value = 0.000	
Levene's Test of Homogeneity	p -value = 0.004		p -value = 0.297	
Mann-Whitney Test	p -value = 0.009		p -value = 0.181	
Mean Household Assets (RM)	30500	22900	55000	45200
Std Deviation, Household Assets	18990	13450	28010	23420
Shapiro-Wilk Test of Normality	p -value = 0.000		p -value = 0.000	
Levene's Test of Homogeneity	p -value = 0.011		p -value = 0.061	
Mann-Whitney Test	p -value = 0.008		p -value = 0.026	