

Examining the Critical Factors Affecting the Repayment of Microcredit Provided by Amanah Ikhtiar Malaysia

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Abstract

This study employs a cross sectional design with stratified random sampling method to examine how common household factors affect repayment performance of Amanah Ikhtiar Malaysia (AIM)'s hardcore poor microcredit program clients in Peninsular Malaysia. This study designed and tested a structural equation model to investigate how uses of loan, household income, number of gainfully employed members, number of sources of income and total savings affect repayment performance. Findings of this study show a significant model fit and negative linear relationship between repayment problem with uses of loan in income generating activities, household income, number of gainfully employed members, and number of sources of income. AIM should therefore focus on designing and providing appropriate training and development programs to enable the hardcore poor households' ability to use credit in income generating activities, grasp employment generating opportunities as well as find and invest in new income generating activities.

Keywords: Microcredit, Repayment Performance, Amanah Ikhtiar Malaysia

1. Introduction

Group based microcredit program is one of the most important innovations in development policy in the last fifty years (Guttman, 2007). The group based microcredit program allows borrowers who cannot provide collateral, to form their own group where members are mutually liable for each others repayments although loans are provided to individual. Since MFO's agree not to take any legal action against defaulters, the only instrument they have against loan defaulters is joint liability, where if any member is unable to repay, other group members cannot borrow unless they assist in repaying defaulters debt. Ghatak (1999) mentioned that group lending programs provide an opportunity for the MFO's to distinguish good borrowers from the risky one. This joint liability feature of group based microcredit program attracts the attention of development communities because of its ability improve repayment performance which allows MFO's to achieve institutional financial sufficiency (IFS) and reaching large number of poor and hardcore poor households thus generating positive socio-economic impacts (Zhang, 2008).

Literature on factors associated with repayment performance of group based microcredit programs is limited, mainly because of the high repayment rate of most of the well known microfinance organizations. Studies commonly focused on how participation in microcredit program improved poor and hardcore poor households socio-economic wellbeing, not whether they encountered any repayment problem and whether there is any difference among the households who encountered repayment problem and those who did not. Among the studies conducted on

repayment performance, they commonly focused on the factors affecting high repayment rate, because most commercial financial organizations categorized poor and hardcore poor as high risk investors and anticipated a very low repayment rate. Arene (1992) in her study in Nigeria measured the effect of clients number level of education, business experience and amount of loan received on repayment performance. Khandaker et al. (1995) in their study in Bangladesh found that training increases repayment performance. Their study also had shown a positive correlation between repayment performance with education infrastructure, density of commercial banks, Grameen Bank manager's salary, electric connection in the area and road width. Matin (1997) in his study on Grameen Bank clients in Bangladesh found that client's level of education and total area of land possessed have a negatively significant effect on repayment problems. Matin (1997) also found that membership period and multiple membership (participation in different microcredit program offered by different MFO's) increases repayment problem whereas loan size did not have a significant effect on repayment performance. Study conducted by Godquin (2004) in Bangladesh denoted that provision of non-financial services have a positive impact on repayment performance and the age of the group members and size of the loan have a negative impact on repayment performance. Hietalahti and Linden (2006) also found that big loan size increases the incidence of repayment problem and also leads to high dropouts. Most recently Deininger and Liu (2009) in their study in India examined whether and how repayment performance is affected by the source of loan, insurance substitute together with loan and group characteristics. Findings of their study showed that loan monitoring, audit, payment frequency and in-kind credit increase repayment performance in India.

The findings of the studies which measured the effect of group dynamics, peer pressure, peer selection, peer monitoring, and other aspects of social capital indicators are also not very straightforward. Zeller (1998) in his study in Madagascar and Wydick (1999) in his study in Guatemala in examining the effect of group dynamics found a positive role of peer selection on repayment performance and they concluded that peer pressure has a significant effect on group's repayment performance. A study conducted by Zeller (1998) also showed that areas with high level of modernization, high density of retailers, program with savings services, size of the group and the ownership of land significantly reduce repayment problem. Wydick (1999) reported that distance between clients businesses and lack of knowledge about each others weekly sales increases the chance of encountering repayment problem. Study conducted by Karlan (2001) also indicated that the lower the distance between group members and the higher the cultural similarities, the lower the percentage of unpaid loan. Ghatak (1999) revealed that group members act cooperatively to increase the repayment rate of group based microcredit programs. However, the findings are not always same. A study conducted by Diagne, Chimombo, Simtowe and Mataya (2000) in Malawi showed that peer monitoring and joint liability had a little or negative effect on repayment performance. Paxton et al (2000) in their study in Burkina Faso showed a positive relationship between repayment problem and group homogeneity, which indicates that social bonding through homogeneity does not improve repayment performance. Their study also reported that rural borrowers encountered higher repayment problem than urban borrowers, commonly due to the high degree of risk associated with agricultural activities. However, Godquin (2004) in Bangladesh reported that group homogeneity has a positive impact on repayment performance. Study conducted by Kasarjyan, Fritzsche, Buchenrieder and Korff (2007) reported that high level of structural and cognitive social capital and high productivity reduce the incidence of repayment problem in Armenia. They also mentioned that the positive effect of joint liability on repayment performance is attributed to the social capital of the group as well as clients knowledge about each others reputation, creditworthiness and intended purpose. Study conducted by Zhang (2008) developed a dynamic model formalizing a 'non-refinancing threat', which formed an integral part of joint liability in group based microcredit model. Zhang (2008) indicated that group lending without the cooperation of group members achieved similar repayment performance as individual lending.

The positive socio-economic impacts of group based microcredit programs and its ability to provide financial services to a large number of poor and hardcore poor households who need the service most to achieve financial sufficiency evidently depends on repayment performance. The borrowers of microcredit who are predominantly the poor and hardcore poor (lower income group), basically do not have any collateral asset, no financial record, no credit history and MFOs lack the means to use the legal system to enforce repayment. In such context, as mentioned by Guttman (2007), economists identified three advantages of group lending that allowed MFO's to accomplish impressive repayment rate. The advantages are:

- a. Clients form groups according to their borrowing tendencies which make it easier for MFOs to identify the safe group from the risky ones. There are two types of borrowers, safe and risky. Borrowers who are likely to succeed in the project funded by the MFOs and/or motivated to repay are safe borrowers. Borrowers who are not safe are risky borrowers. Potential borrowers form their own group is commonly from the same village, know about each other plus have the knowledge about joint liability. Risk averse borrowers tend to form a group among themselves. This

process leads the risky borrowers to make a group among themselves and for MFOs it becomes easier to identify the risky groups and therefore help them to reduce default rate by being more careful about all loan applications.

b. Since MFOs lack the means to use legal systems to enforce repayment, clients knowing each others information on economic and household activities would thus reduce the moral hazards of risky borrowers intentionally not paying the debts.

c. The third advantage of group lending is the ability of the group to enforce loan commitments by using social sanctions, such as social isolation and even violent seizing of delinquent borrower's assets (Guttman, 2007).

This third advantage of group lending over individual lending is one of the biggest concerns from welfare perspective. This is the reason why besides measuring the impact it is also important to measure whether respondents encountered any repayment problem even though the repayment rate is very high. A high repayment rate and positive socio-economic impact does not necessarily tell the whole story about how clients repaid the debt. The poor and hardcore poor households who commonly have low investment opportunities, unable to take risk and low marketable skills commonly suffers the most during economic and natural crisis. It is therefore unwise to expect that they have a stable income, and they have the means to repay their in weekly fixed repayment as practiced by group based microcredit programs. Clients encountered repayment problem may eventually drop out from the program or become inactive borrower. Therefore it is important to explore whether clients face any repayment problems or not. This study therefore attempts to identify what are the factors associated with repayment problem encountered by AIM's hardcore poor clients in Peninsular Malaysia.

2. Study Context: Amanah Ikhtiar Malaysia

The poverty rate in Malaysia has declined dramatically after its Independence. While 49.3% of Malaysian households lived below the poverty line in 1970, the poverty rate has reduced significantly to 16.5% in 1990, and further declined to 3.6% in 2007 (Mid-term Review of the 9th Malaysia Plan). The reduction in poverty rate can be attributed to the rapid economic growth in Malaysia which generated higher-paid employment opportunities and profitable micro and small-scale business opportunities in Malaysia (Economic Report, 2008/09). Moreover, the government of Malaysia undertakes several strategies to increase productivity, diversify sources of income and improve the quality of life of the poor. These poverty reduction strategies were the integrated and integral part of Malaysia's core development plans. The government encourages and works together with private sector and non-government organizations (NGO) to reduce poverty. Malaysia's projects under the development program for the hardcore poor provide assistance to two NGO's; namely, Yayasan Basmi Kemiskinan and AIM. Among them, the most active one, AIM provides financial services to about 82% of the total poor and hardcore poor households in Malaysia. AIM uses a group based Grameen Bank model (a Bangladeshi microfinance organization) and provides collateral free credit to poor and hardcore poor households in order to improve their socio-economic conditions.

Commercial banks in most developing countries exclude the poor and hardcore poor by imposing strict rules and regulations. The demand for the products and services offered by commercial banks is low among the poor, not because "*poor do not need financial services*", but 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 accepting small saving deposits. According to Otero (1999), microcredit provides access to productive capital, which enables the poor self-employed to create productive capital, to protect the capital they have, 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.

AIM started as an applied research project and then institutionalized as a registered private trust in 1987. AIM selects their clients based on clients' gross average monthly household income. Households with gross monthly household income below the poverty line income (PLI) would be considered as absolute poor, while households with gross monthly household income below half of the PLI would be categorized as hardcore poor. PLI has been calculated by the Malaysian government since 1976 and it is estimated based on the price of necessities such as food and other basic needs. AIM only assists households, whose gross monthly household income falls below the PLI which therefore include both poor and hardcore poor households.

In assisting the poor and hardcore poor, AIM practiced a group based model and provides small amount of credit without any collateral. However, no legal action would be taken if the borrowers fail to settle their payments. AIM's microcredit approach is based on small repayment system to be paid on a weekly basis during the center meetings. Although the primary objective of AIM's microcredit schemes is to provide loans for income generating activities (namely I-Mesra loan, I-Srikandi loan and I-Wibawa loan), AIM does provide 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).

2.1. Impact of Microcredit

The microcredit program has created considerable trust and expectations among the academics, policy makers, NGO leaders, donors, investors and other development practitioners all over the world. The first comprehensive impact study done by Hossain (1988), found that Grameen members' average household income was 43% higher than non-participants. Grameen bank members spent 8% more on food and 13% more on clothing than non-participants. The investment in fixed assets is about 2.5 times higher for borrowers with more than three years' membership than for those who joined during the year of the survey. His findings show that with loans, Grameen member's generated self employment and the resulting effects on income was impressive.

Khandker and Chowdhury (1995) noted that the increase in self-employment among the poor with access to credit has resulted in an increase in rural wages. Mustafa et al. (1996), mentioned that BRAC (Bangladesh Rural Advancement Committee, Microfinance Organization, Bangladesh) clients household expenditure increased from an average of BDT419 (BDT - Bangladeshi Currency) per week (members for 1-11 months) to BDT528 (members for 48 or more months), an increase of 28%. The household assets increased from an average of BDT10959 to BDT23230. Kamal (1999) in his study on ASA's (Association for Social Advancement, Microfinance Organization, Bangladesh) clients, noted that among the respondents, 90.42% of members reported that their business capital has increased; 88.41% of the respondents had better access to medical services, 38.93% respondents reported that their household assets have increased; 59.66% reported an increase in value of livestock and 30.32% reported that their ownership of ornaments had increased after participating in microcredit programs.

Khandker and Pitt (1998), in his study on BRAC clients, mentioned that for every BDT100 (BDT – Bangladeshi Currency) lent to a woman, household consumption on the average increased by BDT18; interestingly the figure is BDT11 if the same amount was lent to a man. Moderate poverty falls by about 15% and ultra poverty by 25% for households who have been BRAC members for up to three years. Latifee (2003) in his study on Grameen Bank's clients in Bangladesh noted that about 90% of borrowers reported an improvement in standard of living. He also noted that poverty rate among borrowers declined significantly. Dunn (2005) conducted an impact study in Bosnia and Herzegovina, and indicated that microcredit had a significant positive impact on household income, employment, business investment, business registration and post-war transition. Hussain and Nargis (2008) mentioned that household income increased across all income percentiles for all regular, occasional and non-participant groups. The average annual household income grew at an annual compound rate of 3.88% to rise from BDT48195 in 1998 to BDT60546 in 2004. The study conducted by Rahman, Rafiq and Momen (2009) mentioned that age, education and number of gainfully employed members has a significant positive effect on household income and asset. This study suggested some adjustment to the existing microcredit programs to achieve the intended outcome, that is, to serve the purpose of those in the lower income society. Panda (2009) in his study conducted in India noted a significant increase in borrowers household income (11.41%), asset position was 9.75% higher than non participants and the savings increased by 42.53%. This study also found an increase in annual employment days among the clients.

The impact of AIM's microcredit schemes follow a similar pattern, as found in Grameen's microcredit model. The first internal impact study conducted by Gibbons and Kasim (1990) discovered a significant increase of client's monthly household income. The Second Internal Impact Study (1990), showed further overall improvement among participating households. In mid-1990, the Malaysian government initiated an impact assessment study on AIM's microcredit schemes by a team of 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 overall household income has more than doubled (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, agricultural land and savings. Increase in household income enabled the participants to improve their housing conditions. 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) showed that among non-participating poor, 77 percent were still under poverty line. Among them, 32.7 percent were at the bottom half; and only 23 percent managed to escape out of poverty without microcredit. Salma (2004) noted that household income, expenditure, savings and assets of AIM participants increased compared to non-participants.

3. Research Model

The conceptual model of impact chain present a complex set of links as each 'effect' becomes a 'cause' in its own right generating further effects. 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. The implications of HHEP models were used to design and test a structural equation model to determine how common household variables caused repayment problems. The independent variables are household income, fungibility issue, number of gainfully employed members, number of sources of income, household heads number of years in school and total savings.

Insert Figure 1 Here

Total amount of household income represents household's overall economic wellbeing, therefore expected to have a negative linear relationship with repayment problem and expected to correlate with other independent variables. The fungibility issue represents the uses of loan client's received from AIM's microcredit schemes in non-income generating activities. It was expected that respondents who used credit in income generating activities have a lower chance to encounter repayment problem, therefore expected to have a significant negative linear relationship with repayment problem. Fungibility issue is also expected to correlate with household income and total savings.

The number of gainfully employed members represents the productive base of the households and it is expected that households with a higher number of gainfully employed members will encounter less repayment problem. The number of gainfully employed members will significantly correlate with household income, number of sources of income, household heads number of years in school and total savings. Number of sources of income increase household's ability to repay even when the main economic activities are interrupted. Therefore, number of sources of income are expected to have a negative linear relationship with repayment problem, and also expected to correlate with other independent variables except fungibility issue.

Household heads' number of years in school represents household money management skill, ability to use credit, ability to grasp the economic opportunities and therefore is expected to have a significant negative linear relationship with repayment problem. Total amount of savings represents household's ability to repay, and therefore expected to have a negative linear relationship with repayment problem. Total amount of savings is also expected to correlate with household income, number of gainfully employed members and number of sources of income.

4. Research Design

This research employs a cross-sectional design where the sampling scheme used is stratified random sampling. Samples were selected from three different geographic areas from three states namely Kedah, Kelantan and Terengganu in Peninsular Malaysia. These three states were randomly selected from the bottom six states (poverty rate were relatively higher in these six states) of Peninsular Malaysia based on level of poverty. AIM offered 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 much higher than urban areas. Among these 28 branches, three branches were randomly selected. The selected three branches were Baling in the state of Kedah, Pasir Puteh in the state of Kelantan and Setiu in the state of Terengganu. Data were collected from these three branches.

The sampling methodology was designed to collect data from two groups of clients, where both groups were selected from AIM's client base. Therefore this study selected new clients (number of months as clients was less than 24 months) and old clients (number of months as clients were between 48 months to 72 months) based on the number of month they participated with AIM. All the clients were first selected based on number of months they have stayed 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 the 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 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 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.

5. Summery of Findings

The findings of repayment performance model are summarized in three parts. The first part tested the assumption of multivariate normality. The second part of the findings discusses the model fit summaries, which include Model Chi-Square (CMIN), Relative Chi-Square (CMIN/DF), Root Mean Square Error of Approximation (RMSEA), Goodness-of-Fit Index (GFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Adjusted Goodness-of-Fit Index (AGFI), Tucker-Lewis Index (TLI), Incremental Fit Index (IFI, also known as Bollen's IFI) and Relative Fit Index (RFI). The third part of the findings presents the structural coefficients, correlations, the un-standardized coefficient estimates and the corresponding *p*-values.

The multivariate kurtosis value or Mardia's coefficient for repayment performance model is 34.533, which is higher than 1.96, therefore multivariate normality cannot be assumed. The *p*-value of Bollen-Stine bootstrap test is 0.005, which is also less than 0.05. To fulfill the multivariate normality assumption, the data used in repayment performance model therefore transformed to logarithmic form. The multivariate kurtosis value after logarithmic transformation is 0.794, which is lower than 1.96, therefore multivariate normality assumption is satisfied. The *p*-value of Bollen-Stine bootstrap test is 0.239, which is more than 0.05, which indicates that a satisfactory model fits multivariate non-normality.

The model fit measures were obtained using AMOS version 18 and presented in Table 1. The model chi-square value is 6.150 with 4 degree of freedom. The *p*-value of model chi-square is 0.188, indicating that the overall model fit is acceptable. The relative chi-square value is 1.538, which is smaller than 2, also indicates a good model fit. The comparative fit index or CFI should be equal to or greater than 0.90 for the model to be accepted, which means that 90% of the covariation in the data can be reproduced by the given model. The CFI for the research model is 0.995, providing a satisfactory model fit. By convention, the incremental fit index or IFI should be greater than or equal to 0.90 for the model to be accepted. The IFI for the model is 0.995, indicating a satisfactory model fit. By convention, the Normed Fit Index or NFI values above .95 serves as a good model fit. NFI for the model is 0.968, which indicates a satisfactory model fit. The relative fit index or RFI close to 1 shows a good model fit. RFI for the model is 0.928, signifies a satisfactory model fit. The TLI also called non-normed fit index close to 1 indicates a good fit. The TLI for the research model is 0.974, which is very close to 1, indicates an acceptable model fit. The root mean square error of approximation or RMSEA for the research model is 0.040, which is less than 0.05, provides a satisfactory model fit. Moreover, Hoelter's critical N for the research model at 0.05 level of significance is 513, which is greater than 200, indicating that the sample size used to test the model is adequate. The model fit summaries - CMIN, CMIN/DF, RMSEA, NFI, RFI, IFI, TLI and CFI, all indicate that the model serves as a good fit. In addition Hoelter's critical N indicates that the sample size used is adequate to test this model. However the overall fit test does not establish that the particular paths in the model are significant. Since the research model is accepted by all the above mentioned model fit indexes, the research proceeded to analyze the correlation matrix and structural coefficient.

The correlation coefficients of all variables are presented in Table 2. As expected the average monthly household income has a significant positive moderate to low correlation with total savings, household heads number of years in school, number of gainfully employed members and number of sources of income. The total savings is significantly correlated with number of gainfully employed members and number of sources of income. Fungibility is significantly correlated with household heads number of years in school, but the direction of relationship is opposite of what is expected.

Standardized structural coefficient estimates are based on standardized data and the standardized weights are used to compare the relative importance of the independent variables. When the *p*-value is less than 0.05, the path is significant at 5% level. The standardized regression coefficient, unstandardized regression coefficients and corresponding *p*-values are presented in Table 3. Among the independent variables, the standardized regression coefficients indicates that the higher the household income the lower the chances of encountering repayment problem. A negative coefficient between fungibility issue and repayment problem indicates that respondents who used credit on income generating activities are less likely to encounter repayment problem. The number of gainfully employed members also has a negative regression coefficient with repayment problem, indicating household with higher number of gainfully employed members are less likely to encounter repayment problem. A negative regression coefficient between number of sources of income and repayment problem indicates that households with multiple sources of income are also less likely to encounter repayment problem. Household heads numbers of years in school also decreases the chance to encounter repayment problem. As presented in Table 3, among the regression weights for the five independent variables, two of the coefficients are significant at 5% level. The unstandardized regression weight of household income on repayment problem is - 1.046 with a *p*-value of 0.011, indicates that as expected, clients with high income encountered less repayment problem. However the significant positive linear

relationship between total saving on repayment problem is unexpected. Respondents with higher savings are expected to encounter less repayment problem, but data provides no evidence that total savings decreases repayment problem encountered by hardcore poor clients of Amanah Ikhtiar Malaysia.

6. Conclusions and Recommendations

As mentioned before, the poverty rate in Malaysia declined significantly from 16.5% in 1990 to only 3.6% in 2007. This is also the period when AIM was providing financial services to both poor and hardcore poor households in Malaysia. AIM currently outreached 82% of the total poor and hardcore poor households, with their wide range of collateral free microcredit schemes. AIM is funded by Ministry of Finance, Malaysia, and both the Malaysian government and AIM's objective was to reduce poverty rate in Malaysia. Development academicians and government officials are always trying to find out whether AIM's financial services to the poor and hardcore poor assists them to increase their household income and reduce the poverty rate in Malaysia. Earlier studies showed that AIM's microcredit program significantly increased average monthly household income. This study however focused on measuring the repayment performance among the hardcore poor clients in peninsular Malaysia.

The findings of this study show that microcredit services offered by AIM are not free from fungibility issues and repayment problem. More than 50% of the total respondents reported that they used credit in non-income generating activities, which increases the chance of encountering repayment problem. Repayment problems can lead clients to drop out of the program or become inactive borrowers. When hardcore poor households' income flows are interrupted, which is frequently the case; the clients may have to sell their fixed assets to repay the loan. AIM therefore has to consider a flexible loan policy to allow poor and hardcore poor households to reschedule the loan when clients encounter any financial crisis. A flexible microcredit program with a flexible repayment services is already being practiced by many MFO's all over the world. Microfinance organizations in Bangladesh offer various types of specialized, more flexible microcredit services. Designing a flexible microcredit program with flexible repayment system can attract more potential clients, reduce dropouts, enable existing clients to receive more credit and retain clients for a longer period of time. Moreover, flexible microcredit services will enable clients to receive higher amount of loan and therefore increase the household's income and reduce repayment problem. AIM should also focus on appropriate training and development programs in order to enable the hardcore poor households' to use credit in income generating activities, grasp employment generating opportunities as well as find and invest in new income generating activities, which ultimately reduce their repayment problem.

References

- AIM. (2010). *About Amanah Ikhtiar Malaysia*. [Online] Available: <http://www.aim.gov.my> [2010, December, 09].
- Arene, C.J. (1992). Loan repayment and technical assistance among smallholder maize farmers in Nigeria, *African Review of Money and Banking. A Supplement of Savings and Development Journal*, Vol. 1, pp. 64-72.
- Chen, M. A. and E. Dunn. (1996). *Household Economic Portfolios*, AIMS Project, Washington, D.C.: Management Systems International.
- Deininger, K. and Liu, Y. (2009). *Determinants of Repayment Performance in Indian Micro-Credit Groups*, Policy Research Working Paper – 4885, The World Bank.
- Diagne, A., Chimombo, W., Sintowe, F., & Mataya, C. (2000). Design and sustainability issues of rural credit and saving programs for the poor in Malawi: An action oriented research project. Washington, DC: IFPRI.
- Dunn, E. (2005). *Impact of Microcredit on Clients in Bosnia and Herzegovina*, Foundation for Sustainable Development of the Federation of Bosnia and Herzegovina and Republika Srpska Development and Employment Foundation.
- Economic Report. (2008/09). *Economic Report*, Ministry of Finance, Malaysia, [Online] Available: www.treasury.gov.my [2010, January 17].
- Ghatak, M. (1999). Group lending, local information and peer selection, *Journal of Development Economics*, Vol. 60, Pp. 27–50.
- Gibbond, D.S. and S. Kasem. (1990). *Banking on the Rural Poor*, Center for Policy Research, University Sains Malaysia.
- Godquin, M. (2004). Microfinance Repayment Performance in Bangladesh: How to Improve the Allocation of Loans by MFIs, *World Development*, Vol. 32 (11). Pp. 1909-1926
- Guttman M.J. (2007). *Repayment Performance in Microcredit Programs: Theory and Evidence*, Working Paper-11, Networks Financial Institute, Indiana State University.

- Hietalahti, J. and Linden, M. (2006). Socio-economic Impacts of Microfinance and Repayment Performance: A Case Study of Small Enterprise Foundation, South Africa. *Progress in Development Studies*, Vol. 6, No. 3, pp. 201-210.
- Hossain, M. (1988). *Credit for the Alleviation of Rural Poverty: The Grameen Bank in Bangladesh*, Research Report No. 55, IFPRI, 1988, Washington, D.C.
- Hussain, G. and Nargis, N. (2008). *A Welfare Economic Analysis of the Impact of Microfinance in Bangladesh*, Department of Economics, University of Dhaka, Nilkhet, Dhaka-1000, Bangladesh
- Kamal, M. M. (1999). *Measuring Transformation: Assessing and Improving the Impact of Microcredit*, Impact Evaluation Mechanism of the Association for Social Advancement (ASA). Part 3, [Online] Available: <http://www.microcreditsummit.org/papers/impactpaper3H.htm> [2008, October 9]
- Kasarjyan, M. C., Fritzsche, J., Buchenrieder, G. and Korff, R. (2007). *Repayment performance under joint liability borrowing, does social capital matter? : Evidence from Armenia*, 104th (joint) EAAE-IAAE Seminar Agricultural Economics and Transition, Corvinus University of Budapest (CUB). Budapest, Hungary. September 6-8, 2007
- Karlan, D. (2001). Microfinance Impact Assessments: The Perils of Using New Members as a Control Group, *Journal of Microfinance*, Vol. 3(2). pp. 75-86.
- Khandker, S.R., Khalily, B., & Khan, K. (1995). *Grameen Bank: performance and sustainability*, World Bank Discussion Paper - 306, The World Bank, Washington, DC.
- Khandker, S.R. and O.H. Chowdhury (1995). *Targeted Credit Programs and Rural Poverty in Bangladesh*, Washington, W.C.: World Bank.
- Khandker, S. R. and Pitt, M. (1998). The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter? *Journal of Political Economy*. Vol. 106, pp: 958-96.
- Latifee, H. I. (2003). *Microcredit and Poverty Reduction*, International Conference on Poverty Reduction through Microcredit. Taksim-Istanbul, June 09-10, 2003.
- Matin, J. (1997). Repayment Performance of Grameen Bank Borrowers: The Unzipped State, *Savings and Development*, Vol.4, 1997, pp.451- 473.
- Mid-term Review of the 9th Malaysia Plan (2008) Economic Planning Unit, The Government of Malaysia, [Online] Available: <http://www.epu.gov.my> [2008, December 12]
- Mustafa, S., Ara, I., Banu, D., Hossain, A., Kabir, A., Mohsin, M., Yusuf, A., and Jahan, S. (1996) *Beacon of Hope: An Impact Assessment of BRAC's Rural Development Programme*. Research and Evaluation Department, Bangladesh Rural Development Committee, Dhaka, Bangladesh.
- 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.
- Paxton, J., Graham, D. and Thraen, C. (2000). Modeling group loan repayment behaviour: new insights from Burkina Faso, *Economic Development & Cultural Change*, vol. 48(3). pp. 639-55.
- Rahman, S., Rafiq, R. B. and Momen, M. A. (2009). Impact of Microcredit Programs on Higher Income Borrowers: Evidence From Bangladesh. *International Business & Economics Research Journal*, Vol:-8, Issue: 2
- 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*. M.Phil Thesis, University Science 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.
- Third Internal Impact Study (1994). *Third Impact Study*, Research and Development Unit, Amanah Ikhtiar Malaysia
- Wydick, B. (1999). Can social cohesion be harnessed to repair market failures? Evidence from group lending in Guatemala, *The Economic Journal*, Vol. 109, Pp. 463-475.
- Zeller, M. (1998). Determinant of repayment performance in credit groups: The role of program design, intragroup risk pooling, and social cohesion, *Economic Development and Cultural Change*, Vol. 46(3). Pp. 599-621.
- Zhang, W. (2008). Ex-ante Moral Hazard and Repayment Performance under Group Lending, *Journal of East Asian Studies*, No. 06 (3). Pp. 145-171

Table 1. Model Fit Summary

CMIN	DF	P-Value	CIMN/DF
6.150	4	0.188	1.538
NFI	RFI	IFI	TLI
0.968	0.928	0.995	0.974
CFI	RMSEA	Hoelter's critical N	
0.995	0.040	513	

Table 2. Correlation of all Independent Variables (After Transformation)

Variables	Expected Sign	Pearson's Correlation	
		Estimate	P-Value
Household Income ↔ Total Savings	+	0.589	0.000
Household Income ↔ Fungibility	-	0.050	0.367
Household Income ↔ HHH YIS	+	0.233	0.000
Household Income ↔ GEM	+	0.619	0.000
Household Income ↔ SOI	+	0.255	0.000
Total Savings ↔ Fungibility	-	-0.043	0.430
Total Savings ↔ HHH YIS	+	0.087	0.115
Total Savings ↔ GEM	+	0.400	0.000
Total Savings ↔ SOI	+	0.175	0.001
Fungibility ↔ HHH YIS	-	0.180	0.001
Fungibility ↔ GOM	-	-0.052	0.347
Fungibility ↔ SOI	-	-0.092	0.094
HHH YIS ↔ GEM	+	0.098	0.073
HHH YIS ↔ SOI	+	0.039	0.474

HHH YIS: Household Heads Number of Years in School; GEM: Number of Gainfully Employed Members; SOI: Sources of Income.

Table 3. Regression Coefficients

Variables	Standardized Regression Weight	Unstandardized Regression Weight	P-Value
Repayment Problem ← Household Income*	-0.198	-1.604	0.011
Repayment Problem ← Fungibility	-0.080	-0.074	0.134
Repayment Problem ← Number of Gainfully Employed Members	-0.062	-0.734	0.393
Repayment Problem ← Number of Sources of Income	-0.092	-1.219	0.120
Repayment Problem ← Household Heads Number of Years in School	-0.058	-0.048	0.290
Repayment Problem ← Total Savings*	.272	1.182	0.000

Note: * Significant at 5% level

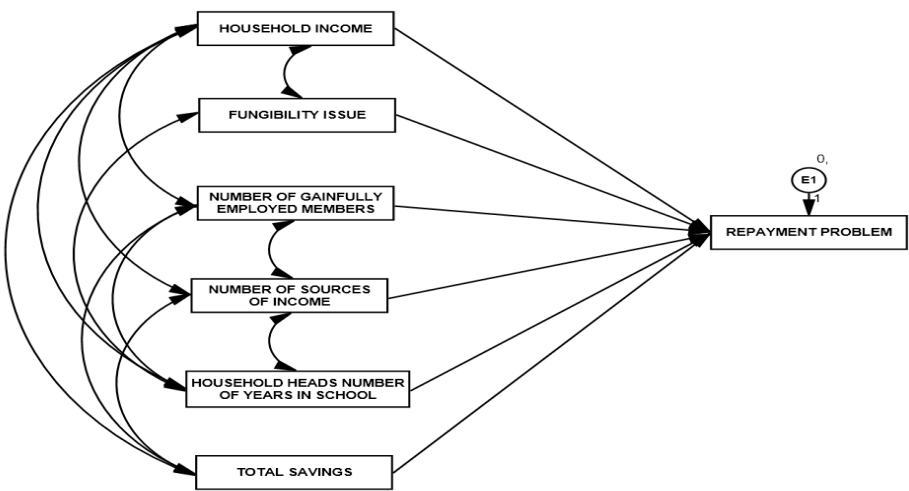


Figure 1. Repayment Performance Model