

Empirical Investigation on Repayment Performance of Amanah Ikhtiar Malaysia's Hardcore Poor Clients

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Abstract

This study employs a cross sectional design with stratified random sampling method to examine the factors that are associated with repayment problem encountered by clients of Amanah Ikhtiar Malaysia (AIM)'s microcredit program. Findings of this study show that fungibility issue, number of gainfully employed members and number of sources of income and household's main economic activities are associated with repayment problems. AIM therefore has to focus on advising the clients to use the credit in income generating activities. Policies should also be reviewed and re-organized to increase employment rate and income generating opportunities among client's household members by providing appropriate training, diversifying the loan program and offering loans for-non income generating activities.

Keywords: Microcredit, Repayment performance, Hardcore poor, Amanah Ikhtiar Malaysia

1. Introduction

Commercial banks in most developing countries commonly exclude the poor and hardcore poor from credit facilities because of high transaction cost, their inability to fulfill the collateral requirements, their unstable income and lack of marketable skills; therefore they are considered as highly risky lending option (Pralhad, 2006). Empirical evidences from all over the world shows that microfinance organizations, providing small amount of collateral free credit to poor and hardcore poor households, have high repayment rates. The group based microcredit programs which includes joint liabilities feature has caught the attention of both practitioners and academicians because of their positive impact on repayment performance. The survival of the microfinance organizations (MFO) and their abilities to provide financial services to large number of poor and hardcore poor households eventually depends on repayment performance. High repayment rate allows MFO's to provide financial services with minimum interest rate. It also enables MFO's to achieve institutional financial sufficiency, which allows them to receive loans from formal commercial organizations. The flow of fund from formal commercial organizations is vital for MFO's to provide stable financial services to a large number of poor and hardcore poor households.

The group based microcredit program is one of the most important innovations in the 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 individually. Since MFO's agreed not to take any legal action against defaulters, the only instrument they have against loan default is joint liability, where if any member is unable to repay, other group members cannot borrow unless they repay defaulters debt. This joint liability feature of group based microcredit program attracts the attention of the development communities because of its ability to improve repayment

performance which allowed MFO's to achieve institutional financial sufficiency (IFS) and reach large number of poor and hardcore poor households and generate positive socio-economic impacts (Zhang, 2008).

The most famous and successful group based microcredit methodology was started as an action research project, launched in 1976 by Professor Mohammad Yunus in Bangladesh. Microcredit 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. As reported by Harris (2006), the Microcredit Summit adopted the definition of microcredit as a program that provides small amount of loans to poor people, particularly women for income generating projects which allow them to care for themselves and their families. Grameen banks microcredit model was replicated by many other NGOs (non-government organization) around the world, and Amanah Ikhtiar Malaysia (AIM) is one of them.

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 - has been calculated by the Malaysian government since 1976. It was estimated based on the necessity of food and other basic needs) would be considered as absolute poor, while households with gross monthly household income below half of the PLI would be categorized as hardcore poor. AIM only selects those households, whose gross monthly household income falls below the PLI which therefore includes both poor and hardcore poor households. 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. 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).

Empirical investigations conducted all over the world indicate positive socio-economic impact of microcredit on poor and hardcore poor borrowers, their households and communities. As mentioned by Abed (2000), microcredit has produced positive impacts on two vital areas of national development – alleviation of poverty and women's empowerment. Products and services of microcredit programs are targeted to the poor and hardcore poor households, who make up nearly half of the total population of the world (Abed, 2000). Hossain (1988) noted that Grameen bank members' average household income was 43 percent higher than non-participants. He also pointed out that about one third of the members were unemployed before they joined the microfinance program. With the loans, these members involved in self-employment activities and the resulting effects on income were impressive. Few years later, in their impact study on Grameen bank's clients, Khandker and Chowdhury (1995) noted that the increase in self-employment among the poor with access to credit had resulted in an increase in rural wages. Mustafa et al. (1996), mentioned that Bangladesh Rural Advancement Committee (BRAC) clients have better coping capacities in lean seasons and that these increased with length of membership and amount of credit received from BRAC. Latifee (2003) in his study on Grameen Bank's clients in Bangladesh noted that about 90 percent of the borrowers reported an improvement in standard of living. He also noted that poverty rate among the borrowers declined significantly. Dunn (2005) after conducting an impact study in Bosnia and Herzegovina, 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. Panda (2009) in his study conducted in India noted a significant increase in borrowers household income (11.41 percent), asset position was 9.75 percent higher than non participants and the savings increased by 42.53 percent.

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 the first two impact studies. The study noted that the overall household income had 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 of them were still below the 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 the household income, expenditure, savings and assets of AIM participants increased compared to non-participants.

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, and 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 legal system to enforce repayment. In such context, as mentioned by Guttman (2007), economists identified three advantage of group lending that allowed MFO's to accomplish impressive repayment rate. The advantages are:

- a) 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 commonly from the same village and they know about each other plus have the knowledge about joint liability. Risk adverse 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) 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 most in economic and natural crisis. It is therefore unwise to expect that they have a stable income, which they need to repay in weekly fixed repayment method 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 are facing 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. Review of Literature

The literature on factors associated with repayment performance of group based microcredit programs is limited, mainly because of the high repayment performance of most of the well known microfinance organizations. Studies commonly therefore 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, where most of the 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 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 the repayment performance. Their study also showed 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 significant negative effect on repayment problems. Matin (1997) also found that membership period and multiple membership (participation in different microcredit programs offered by different MFO's) increase the repayment problem whereas loan size did not have a significant effect on repayment performance. Study conducted by Godquin (2004) in Bangladesh found 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 has 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 drop outs. 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 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 concluded that peer pressure significantly affects groups repayment performance. Wydick (1999) also indicated that distance between clients businesses and lack of knowledge about each others weekly sales increases the chance of encountering repayment problem. Ghatak (1999) revealed that when group members act cooperatively it increases 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 little or negative effect on repayment performance. On the other side Godquin (2004) in Bangladesh reported that group homogeneity have a positive impact on repayment performance. Study conducted by Kasarjyan, Fritzsche, Buchenrieder and Korff (2007) reported that higher level of structural and cognitive social capital and high productivity reduce the incidence of repayment problem in Armenia. 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.

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 AIMS' 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) have some implications for measuring the factors associated with repayment problem and this research sets the research hypothesis based on the implications of these two models. The objective of this study is to measure the association between common household and loan characteristics with repayment problem encountered by Amanah Ikhtiar Malaysia's hardcore poor clients in Peninsular Malaysia. In conjunction with the research objective, the following specific alternative hypotheses are investigated:

- 1) Hypothesis 1 (H_1): Fungibility issue in microcredit program leads to an increase in repayment problem. The fungibility issue indicates how respondents' use the total amount of credit they received from AIM's microcredit schemes. It is expected that respondents who used credit in non-income generating activities have a higher chance to encounter repayment problem.
- 2) Hypothesis 2 (H_2): An increase in household income leads to a decline in repayment problem. Total amount of household income represents household's overall economic wellbeing, therefore households with higher income is expected to have less repayment problem.
- 3) Hypothesis 3 (H_3): The higher the number of gainfully employed members in the household, the lower the repayment problem. The number of gainfully employed members represents the productive base of the household and it is expected that households with a higher number of gainfully employed members will encounter less repayment problem.
- 4) Hypothesis 4 (H_4): The higher the number of sources of income per household, the lower the repayment problem. Number of sources of income increases household's ability to repay even when the main economic activities are interrupted. Therefore, it is expected that households with a higher number of sources of income will encounter less repayment problem.
- 5) Hypothesis 5 (H_5): An increase in total savings leads to a decline in repayment problem. Total amount of savings represents household's ability to repay, and therefore it is expected that households with a higher amount of total savings will encounter less repayment problem.
- 6) Hypothesis 6 (H_6): Households main economic activity is associated with repayment performance. It is expected that a higher percentage of respondents who are in self-employed activities encounter less repayment problem.

4. Research Design

This research employed a cross-sectional design where the sampling scheme used was 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. 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 expected to be much higher than urban areas. Among these 28 branches, three branches were randomly selected. The selected three branches were Baling from Kedah, Pasir Puteh from Kelantan and Setiu from 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. This study selected new clients (number of months as clients was less than 24 months) also noted as new respondents and old clients (number of months as clients were between 48 months to 72 months) also noted as old respondents, 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 percent of the 2779 clients were hardcore poor and out of these 505 clients, 22 clients or 4.36 percent clients dropped out from the program. Data were than collected from AIM's client 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 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 test for homogeneity of variance were performed prior to the test on 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 Testing Hypothesis 1

This study examined whether respondents used the total amount of economic loans they received from AIM on income generating activities or not. As per the Table 1, among total 333 respondents, 182 respondents or 54.65 percent of total respondents mentioned that they used total amount of economic loans on income generating activities. However, around 45 percent total respondents mentioned that they used at least a part of the economic loans on non-income generating activities. These confirmed the presence of *fungibility* issue among AIM's microcredit clients. Moreover as presented in Table 1, 70 percent of the total respondents noted that they did not face any repayment problem and 30 percent of them mentioned that they faced repayment problem at least once. Out of 182 respondents who did not use credit on non-income generating activities, 79.1 percent of them did not have any repayment problem and 20.9 percent had repayment problem. On the other hand, among 151 respondents who used credit on non-income generating activities a relatively higher percentage of them had repayment problems. The *p*-value of cross tabulation Pearson's Chi-square test is less than 0.05, which indicates that the percentage of clients used credit on income and non-income generating activities differed significantly among percentage of respondents who have and don't have repayment problem. A significantly higher percentage of respondents who used credit for non-income generating activities had repayment problem. Therefore, in regard to the research hypothesis 1, this study concludes that the repayment problem is high in the presence of fungibility.

5.2 Testing Hypothesis 2, 3, 4 and 5

The mean, standard deviation (SD) and coefficient of variation (CV) of the monthly household income, number of gainfully employed members, number of sources of income, household heads number of years in school and total savings among respondents who have and do not have repayment problem are presented in Table 2. As per table 2, the mean monthly household income, number of gainfully employed members and number of sources of income among respondents without repayment problem is relatively higher than respondents with repayment problem. It is also noted that the variability of the distribution of monthly income, gainfully employed members and sources of income among respondents without repayment problems are also higher than respondents with repayment problem. The *p*-value for Mann-Whitney tests indicates that the mean number of sources of income and mean number of gainfully employed members among respondents without repayment problem are significantly higher than that of respondents with repayment problem. However data do not provide enough evidence to conclude that the mean difference in household income and total savings are statistically significant among respondents repayment performance – have and do not have repayment problem.

5.3 Testing Hypothesis 6

A cross tabulation of number and percentage of respondent's household's main economic activity with respondents with and without repayment problem is presented in Table 3. Household's main economic activities suggest that a relatively high percentage of respondents households with main economic activity which includes

self-employed production and salaried work, have repayment problem. On the other hand, a relatively higher percentage of respondents households whose main economic activity is trade, do not have repayment problem. The p -value of cross tabulation Pearson chi-square test is less than 0.05, which indicates that a relatively higher percentage of respondents without repayment problem are engaged in trading activities. In regard to the research hypothesis, this study therefore concludes that household's main economic activity affect repayment performance.

6. Conclusions and Recommendations

As mentioned before, the poverty rate in Malaysia declined significantly from 16.5 percent in 1990 to only 3.6 percent 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 percent of the total poor and hardcore poor households. Since AIM is funded by Ministry of Finance, Malaysia, both the Malaysian government and AIM's objective is 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 facilitates in increasing poor and hardcore poor household income thus reducing the poverty rate in Malaysia. Earlier studies showed that AIM's microcredit program significantly increases clients' average monthly household income, assets and quality of life. This study however focused on measuring the repayment performance among the hardcore poor clients in peninsular Malaysia.

Findings of this study showed that a significant number of respondents use the credit they received from AIM for income generating and some non-income generating activities. The findings indicate that there is an association between uses of credit and respondents repayment performance. Respondents who used credit in non-income generating activities have a higher chance to encounter repayment problem. This is one of the reasons which lead to increase repayment problem among AIM's microcredit clients. Moreover, the mean number of gainfully employed members and the number of sources of income is also significantly lower among respondents who encountered repayment problem. This clearly indicates that household's ability to use credit to grasp employment generating opportunities and invest in new income generating activities reduce the chances of encountering repayment problem.

The findings of this study show that the uses of loan in income generating activities, number of gainfully employed household members and number of sources of income reduce the chances of encountering repayment problem. AIM should therefore 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. AIM also needs to provide a broader, need based microcredit services, which not only improve the impact but also reduce the turnover, retain clients for longer period of time and clients therefore will have the opportunities to borrow for non-income generating activities. The credit services can be diversified by expanding group loan size, and by providing working capital loan, fixed asset loan, seasonal agricultural loan, car loan, consumer loan, emergency loan and parallel loan.

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Table 1. Cross tabulation results of fungibility and repayment problem

Fungibility		Repayment Problem		Total
		No	Have	
Absent	Count	144	38	182
	percent	79.1 percent	20.9 percent	100 percent
Present	Count	89	62	151
	percent	58.9 percent	41.1 percent	100 percent
Total	Count	233	100	333
	percent	70.0 percent	30.0 percent	100 percent
Pearson Chi-Square test, $r = 15.996$, $df = 1$, $p\text{-value} = 0.000 < 0.05$				

Table 2. Difference in common household characteristics among respondents who have or do not have repayment problem

		Repayment Problem		Total
		No	Have	
Monthly Household Income	N	233	100	333
	Mean	852.27	688.10	802.97
	SD	601.44	345.92	542.34
	CV	0.71	0.50	0.68
Shapiro-Wilk Test, $p\text{-value} = 0.000 < 0.05$; Levene's Test, $p\text{-value} = 0.000 < 0.05$ Mann-Whitney U, $p\text{-value} = 0.079 > 0.05$				
Number of Gainfully Employed Members	N	233	100	333
	Mean	1.40	1.25	1.35
	SD	0.62	0.50	0.58
	CV	0.44	0.40	0.43
Shapiro-Wilk Test, $p\text{-value} = 0.000 < 0.05$; Levene's Test, $p\text{-value} = 0.001 < 0.05$ Mann-Whitney U, $p\text{-value} = 0.027 < 0.05$				
Number of Sources of Income	N	233	100	333
	Mean	1.30	1.17	1.26
	SD	0.57	0.40	0.52
	CV	0.44	0.34	0.41
Shapiro-Wilk Test, $p\text{-value} = 0.000 < 0.05$; Levene's Test, $p\text{-value} = 0.000 < 0.05$ Mann-Whitney U, $p\text{-value} = 0.038 < 0.05$				
Total Savings	N	233	100	333
	Mean	266.43	300.12	276.54
	SD	220.72	212.91	218.37
	CV	0.83	0.71	0.79
Shapiro-Wilk Test, $p\text{-value} = 0.000 < 0.05$; Levene's Test, $p\text{-value} = 0.793 > 0.05$ Mann-Whitney U, $p\text{-value} = 0.07 > 0.05$				

Table 3. Households Main Economic Activities and Repayment Problem

Household's Main Economic Activity		Have Repayment Problem	No Repayment Problem	Total Clients
Self-Employed Production	Count	28	38	66
	percent within Economic Activity	42.4 percent	57.6 percent	100.0 percent
	percent within Repayment Status	28.0 percent	16.3 percent	20.1 percent
Self-Employed Trade	Count	20	88	108
	percent within Economic Activity	18.5 percent	81.5 percent	100.0 percent
	percent within Repayment Status	20.0 percent	37.8 percent	31.8 percent
Self-Employed Service	Count	10	22	32
	percent within Economic Activity	31.2 percent	68.8 percent	100.0 percent
	percent within Repayment Status	10.0 percent	9.4 percent	9.6 percent
Wage Work	Count	22	50	73
	percent within Economic Activity	30.6 percent	69.4 percent	100 percent
	percent within Repayment Status	22.0 percent	21.5 percent	21.9 percent
Salaried Work	Count	20	35	55
	percent within Economic Activity	36.4 percent	63.6 percent	100.0 percent
	percent within Repayment Status	20.0 percent	15.0 percent	16.5 percent
Total	Count	100	233	333
	percent within Economic Activity	30.0 percent	70.0 percent	100.0 percent
	percent within Repayment Status	100.0 percent	100.0 percent	100.0 percent
Pearson's Chi-Square = 12.718, df = 4, p-value = 0.0013 < 0.05				