

Can Islamic Micro-financing Improve the Lives of the Clients: Evidence from a Non-Muslim Country

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Abstract

Microfinance has become very important for financial inclusion micro-based economic development and the rise of Islamic finance responds to this change in many parts of the world. In Thailand, an Islamic microfinance institution has been established in Pattani Province in 1987. This demand-side impact study is one of the first attempts to evaluate the impact of an Islamic microfinancial product in Thailand. Knowledge on impact helps to assess whether Islamic microfinance can be an alternative solution for the poor and financially excluded Muslims who forms a large part of the world poor. Using a combination of questionnaire and semi-structured interview, this study reveals that *murabahah* micro-financing has impacts on economic well-being of clients' households. The results further indicate that the impacts are either direct or indirect and these are likely to be influenced by clients' characteristics, including age, membership length, gender, occupation and the level of productive assets the clients possess. These characteristics can be classified into awareness and exposure about the operations and procedures related to Islamic microfinance institutions, in general, and the product (Islamic micro-financing), in particular; affordability and existing financial needs.

I. Background

Although, Thailand is a predominantly Buddhist country, Muslims are found across the country and are regarded as the largest minority. At present, Muslim groups constitute Indian Muslims or *pathan*, Sulwesi Muslims who migrated from Macassars, the Haw Chinese Muslims, and the largest group, the Malay Muslims in the deep south (Kersten, 2004). The majority of Muslims are living in the southern border provinces of Pattani, Yala, Narathiwat and Satun. As illustrated in Table 1, the total population of Thailand was 63.5 million in 2009, of which 8.8 million and 2.1 million people lived in the South and Four Provinces (Pattani, Yala, Narathiwat and Satun) respectively (DOPA, 2010). Muslims represent around 4.6% of the total population, around 27.8% in the South and 80.3% in Four Provinces. Some reports indicate that the total Muslim population in Thailand could be around 10.0% of the total population or around 6 million, *i.e.* more than three times the official figure (Sarntisart, 2005). Another important fact is that the Muslim-populated provinces tend to be poorer

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than other provinces in Thailand. The per capita income of the southern region and the two wealthy southern provinces of Phuket and Songkhla in 2009 was THB95,721 (USD2,856) and THB161,450 (USD4,817), respectively. The Four Provinces recorded significantly low per capita income of THB76,387 (USD2,279). The national average per capita income was at THB135,281 THB (USD4,037).¹

Some other socio-economic indicators indicate that the four provinces are far below the country standard. These include levels of economic growth, income disparities, employment and educational attainment (Adelman and Robinson, 1989; Sarntisart, 2005; Madmarn, 1999; Narongraksakhet et al., 2006).

Table 1: Religious background of Thai population in 2009

Population group	Whole Kingdom	South	Two Provinces	Four Provinces
Total population (million)	63.5	8.8	1.7	2.1
Per capita income (USD)	4,037	2,856	4,817	2,279
% share of Muslim population	4.6	27.8	28.5	80.3

Source: 1) Calculated from information available from provincial offices

2) NESDB (2011)

The financial structure of Thailand is broad. The major constituents of the country's financial system comprise commercial banks, special financial institutions, non-bank financial intermediaries and capital markets (Shanmugam and Perumal, 2007). The financial institutions are classified based on business activities and supervised by the Central Bank (Bank of Thailand), the Ministry of Finance, the Ministry of Agriculture and Cooperatives etc. (Haron and Yamaruding, 2003). Islamic microfinance institutions (IsMFIs) in the form of cooperative operate under the Cooperative Act B.E. 2542 (1999) and are supervised by the Cooperative Promotion Department and the Cooperative Account Auditing Department in Ministry of Agriculture and Cooperatives. Since the first IsMFI was established in 1987, a limited number of studies have been conducted to document the history, operations and performance of the IsMFIs in Thailand. To the researcher's knowledge, no studies have been conducted on impacts of Islamic microfinance in Thailand. This study is therefore proposed to explore perceptions of IsMFIs' customers on impacts of Islamic micro-financing on their lives. In addition, this study is conducted from a client perspective (demand-side) which is largely neglected in microfinance literature. As argued by Matin et al. (2002), this such study has become increasingly important when microfinance has moved towards market-led industry today.

¹ The amounts in USD were calculated based on exchange rate of USD1=33.5144 Baht

II. Economic impacts of microfinance

Microfinance,² the supply of loans, savings, insurance and other financial services to target towards low-income people, is well-recognised as an effective tool which may enable the poor and excluded to access formal financial services for the first time. Miyashita (2000) showed that microfinance institutions (MFIs) in Indonesia play a significant role in poverty reduction. Chowdhury (2008) proved that the poverty of microfinance clients in Bangladesh and the Philippines declines when the membership duration and loan size increase. Chowdhury et al. (2005) find that micro-credit in Bangladesh reduces poverty, and the impact of microfinance is particularly strong in the first six years and diminishes from that point onwards. Von Pischke (1992) concluded that modern microfinance is not a viable mechanism. This view is shared by, among others, Buckley (1997), Schreiner (1999) and Bhatta (2001).

The frequently-used economic indicators of impacts include improved income level, increased productive assets, improved housing and enhanced self-employment in households. Empirical evidence from various countries on impacts of microfinance on income tends to lead to mixed results. Copestake et al. (2001), Mahjabeen (2008) and Chowdhury et al. (2003) found that the clients of microfinance institutions can enhance their income. Park and Ren (2001) showed that NGO-led microfinance programmes in China improved income levels of the rural poor people. This finding is also supported by Waheed (2009), Afrane (2003) and Kondo et al. (2008). Shaw (2004), Haque and Yamao (2008) and Nader (2008) further stated that the level of income impact depends on initial income level of households. Copestake et al (2001) reveal that female heads of households can improve income from micro-loans. Education can be another factor, effecting the level of impact (Swain and Floro, 2007). This however contradicts with the findings of Khandker et al. (1998) and Nader (2008). According to Chowdhury (2008) membership length could affect the level of income impact of microfinance programmes. Braverman and Guasch (1986), however, found that subsidised programmes failed to improve rural incomes or alleviate poverty. Ullah and Routray (2007) found no significant improvement of the clients' income level after they participated in microfinance programmes in Bangladesh.

Other indicators of economic impact are assets accumulation. It is argued that loans from MFIs enable poor households to accumulate assets for productive and non-productive purposes. Pitt and Khandker (1998) found that participation in microfinance programmes allowed women to acquire more non-land assets, led to increased labour supply, and improved children's schooling rate. Chowdhury et al. (2003) affirm that joining a microfinance programme makes it possible for the clients to accumulate more assets and, increase their employment opportunities, and also creates more assets for the clients compared to non-

² Microfinancial services can now be supplied by various forms of organisations, including private commercial banks, government specialised banks, cooperatives, self-help groups, NGOs, and non-bank financial institutions (see Ledgerwood, 1999)

clients. This notion is also supported by Mosley (2001), Ahmed (2002), Sharma and Bucheniender (2002), Chowdhury et al. (2003), Coleman (2006), Nader (2008) and Adjei et al. (2009). In addition, women's participation in microfinance has a significant impact on the assets-holding of households. Ullah and Routray (2007) and Kondo et al. (2008) conversely proved that there was no evidence of increased non-productive assets of microfinance clients.

Participating in a microfinance programme may also enable the clients to expend or build a house for their households. Ahmad and Ahmad (2008), for instance, found that IsMFIs in Australia enhance the ability of the clients to acquire houses for their households. In a similar manner, Rahman and Ahmad (2010) and Berhane and Gardebroek (2011) found that microfinance programmes provide the opportunity for clients to expand their houses and to undertake more house repairs and maintenance. Hashemi et al. 1996, Mustafa et al. 1996, Johnson and Rogaly 1997, and Amin et al. 1998 further, reveal that female clients are more likely to expend or build houses using loans from microfinance institutions.

The final important economic impact factor is enhanced self-employment. The findings in previous research tend to suggest that microfinance can improve self-employment opportunities in households. Pitt and Khandker (1998), Chowdhury et al. (2003), Rahman (2010), and Rahman and Ahmad (2010), for example, found that microfinance programmes, including Islamic ones, can enhance labour supply and production opportunities in households. Hulme and Mosley (1996) concluded otherwise.

III. Economic impacts of Islamic microfinance

Islamic microfinance is a relatively new phenomenon. Earlier advocates of Islamic microfinance believe that microfinance has a similar ideology and objectives as Islamic finance. Islamic financial institutions should therefore adopt microfinance activities to help improve the lives of poor Muslims worldwide (Dhumale and Sapcanin, 1999). The cultural and religious sensitivity of Muslims must be taken into consideration in the process of building financial inclusion for Muslim societies. This attempt will possibly bring a large segment of the world's poor groups into the fold of a formal financial system (Helms, 2006).

Academics and practitioners involved in microfinance assert that poor Muslim populations are similar to the poor in other societies. They need financial services on various occasions and in a number of ways (Ledgerwood, 1999). They need loans for life cycle events such as birth, education of their children and harvest season. They also face occasional emergencies such as serious illness, death of head of the household and unexpected loss of employment. Sometimes, they have opportunities to enhance their economic standing by investing in business, buying land, or acquiring assets. Hence, they should have access to a variety of financial services probably comprising micro-credit, micro-savings, micro-transfer, and micro-insurance (Obaidullah and Khan, 2008). As an ideal, these financial services must

be provided in accordance with Islamic principles.

Islamic finance and microfinance share many core theoretical and practical aspects. Both promote social and development goals of societies and encourage the poor segments of communities to take part in development activities (Dhumale and Sapcanin, 1999). Besides, the two finances advocate entrepreneurship and risk sharing among participants. In practice, there are no fundamental contradictions in the global microfinance best practices and the Islamic approach to poverty eradication. In this regard, the basic operational format of main stream microfinance can be adopted by Islamic societies to fight against persistent poverty in the Muslim world (Ahmed, 2002; Obaidullah and Khan, 2008).

Nevertheless, the Islamic form of microfinance is created based on monetary and religious injections. Therefore, it differs in its business practices and the values that guide its operations and outlook. The empowerment targets and beneficiaries in Islamic microfinance, for example, must be families rather than women, in contrast to conventional microfinance projects. Women may be targets of an IsMFI due to ease of availability. Benefits and responsibility to repay accrue to the family as a whole. Islamic programmes are also expected to build on their injection of Islamic principles. People will be more comfortable adapting to these principles as they treat them as parts of their belief and worship. Social capital in the form of a feeling of brotherhood will increase the likelihood of debts being repaid (Ahmed, 2002; Wilson, 2007).

Other key distinctions are the prohibitions of *riba*, *gharar* and the promotion of Islamic-compliant financial instruments. Asset acquisition and financing, particularly contracts, of an IsMFI must not involve any of the prohibitions. Alternative financing such as *mudarabah*, *musharakah* and *murabahah* replace the *riba*-based conventional instruments. Islamic charitable sources such as *zakah*, *sadaqah* and *awqaf* can be explored to provide financial alternatives, particularly to the core poor (Obaidullah and Khan, 2008; Dusuki, 2008).

All microfinance programmes aim at increasing the welfare of participants in various ways. Similar to other MFIs, IsMFIs are expected to build on economic and social wellbeing of participants. Economic impacts of a microfinance programme include increased employment, economic activity and assets. Social impacts of an IsMFI may include improved religious knowledge, better relationship with spouse and other members and collective action and lobbying. IsMFIs appear to perform well in all these areas (Ahmed, 2002; Rahman and Ahmad, 2010; Babar, 2011; El-Gamal et al., 2011; Bhuiyan et al., 2011).

A comprehensive study conducted on Islami Bank Bangladesh's microfinance programme confirms that the IsMFIs microfinance programme offers better organisation of their economic activities and spurs more ethical and economically desirable behaviour (Rahman, 2010). This brings about increased household income, expenditure, productivity of crops and livestock and employment. The average client's income, for example, is reported to

have increased by more than 33 per cent. The Logit-Model shows that a client's age, number of family members in farming, total land size and their ethics and morals had significant influence on household income. Expenditure change was observed for such items as food, furniture purchasing, and house repair and maintenance (Rahman and Ahmad, 2010).

Man-days involved in productive household activities increased by 7.14 per cent. This was recorded in both males and females in the households. In addition, the Islamic microfinance programme triggers a change in assets acquired by the clients including house, land, furniture, radio, television, cycle and cart. The livestock and crop productivity of the clients improves. Goat breeding (26.92 per cent) and vegetable production (28.83 per cent) registered the highest changes in livestock and crop productivity respectively (Rahman and Ahmad, 2010, Rahman, 2010).

Ahmed (2002) showed that three other IsMFIs in Bangladesh were able to increase the time spent on income-generating activities by the clients and their family members. The programmes also increased output and diversified production activity of the clients. The clients of an IsMFI, for example, saw their output increase by 53.8 per cent while another reported a 36 per cent increase in production diversification. A majority of the clients increased their asset base and improved their premises.

A study on the Sudanese Islamic Bank's rural development programmes for poor farmers confirms that Islamic microfinance projects can be effective tools for improving the food security and income of the poor. It was reported that most clients of the programmes, under *bai muajjal* contracts, gained a monthly additional income of between 152 to 271 Sudanese pounds. Those involved in crop production, using *musaqa*³ and *musharakah*, received profits ranging from 10 to 20 per cent (Osman, 1999).

This research examines the economic impacts of Islamic micro-financing (*murabahah*) on client households to fill in the literature gap on Islamic microfinance in general and impacts of Islamic microfinance in particular. Most of the studies are either related to basic concepts of Islamic microfinance such as its similarities and differences compared to conventional microfinance, or to propose models of Islamic microfinance, Islamic contracts applicable for Islamic microfinance, and operations and experience of emerging Islamic microfinance in Muslim communities, mostly Islamic countries (Dhumale and Sapcanin, 1999; Ahmed, 2002; Ahmed, 2007; Al Asaad, 2008; Wilson, 2007; Dusuki, 2008; Seibel, 2008; Smolo and Ismail, 2011). In addition, this research applies demand-side study of microfinance, dissimilar to most microfinance literature which focuses on institutional or supply-side study. As such, the perceptions and opinions of IsMFIs' customers are sought rather than the information

3 Co-irrigation: the Sudanese Islamic Bank undertakes the provision of irrigation pumps and accessories installs them on the farm and authorises their operations by the farmer. The contract sanctioning the operation would stipulate payment by the farmer of a proportion of his produce, where the Bank undertakes to meet all expenses relating to the running maintenance including spare parts (Osman, 1999: 225)

from IsMFIs themselves. This may lead to a better understanding of microfinance's consumer behaviours and market-led and more effective microfinance programmes stated by Martin et al. (2002).

IV. Research method

The main method of research on the impacts of microfinance institutions has been quasi-experiment (Hulme, 2000). However, this method fails to provide in-depth understanding of the reasons behind the impacts. Qualitative study might offer some insight into those reasons (Zohir and Matin, 2004). In this study, a combination of quantitative method and qualitative method is employed. In particular, survey-based questionnaire and semi-structured interview are the two methods used to help the researcher to ascertain the economic impacts of Islamic microfinance on client households.

4.1. Data collection

The collection of data consists of two stages: survey-based questionnaire to 400 clients of the IsMFIs; and semi-structured interviews with 37 interviewees who are the clients who have substantial knowledge about the operations of the IsMFIs and have applied for Islamic micro-financing in the past few years.

4.2. Development of the Questionnaire and Interview Questions

This article is based on the main questionnaire and semi-structured interview designed to analyse the demand and performance of Islamic microfinance in Thailand. The main questionnaire comprised 9 sections in which the questions in 3 sections have been used in the analysis in this article: section 1 which provides information of the respondents (gender, age, marital status, education, religious education, occupation); section 2 gives the information on the respondents' households (size of household, members in income generating activities, additional income earned, agricultural land size, total land size, kind of house, productive assets, and non-productive assets); and section 6 consists of a list of propositions related to economic impacts of Islamic micro-financing. The respondents were asked to indicate their levels of agreement on a Likert scale of 1 (strongly disagree) to 5 (strongly agree), with 'neutral' as a score of 3. The main interview questions consist of 8 sections and only section 4 which deals with the economic impacts of Islamic micro-financing is relevant for the analysis in this article.

4.3. Survey Samples and Analysis of Questionnaires

The population chosen for this study comprised organisational population and client population. The organisational population of IsMFIs in Thailand is not known. However,

it has been reported by department of Cooperative Promotion of Thailand that 24 Islamic cooperatives have formed the Association of Islamic Cooperative in 2008. The sample size for IsMFIs was four IsMFIs based on the size, experience and availability of relevant information. The sample includes the Pattani Islamic Cooperative, Ibnu Affan Savings Cooperative, Ibnu Auf Cooperative, and As-Siddeek Cooperative. The sample size for the individual respondents comprised 400 respondents, including the clients of the Pattani Islamic Cooperative (102 respondents), Ibnu Affan Savings Cooperative (100 respondents), Ibnu Auf Cooperative (97 respondents), and As-Siddeek Cooperative (101 respondents).

The cooperatives' members are those who have paid shares to the cooperatives and received financial and non-financial services from the cooperatives. They are expected to have some knowledge about the IsMFIs and their products and have firsthand experience in terms of the benefits that they obtain from the IsMFIs. Thus, they will be in a position to provide informative responses on the impacts of Islamic micro-financing on income of households.

A pilot test of the questionnaire was initially conducted on 20 respondents in Pattani province, and feedback was sought on the instrument. Only minor changes were made after the pilot test. In total, 445 questionnaires were distributed and 400 complete questionnaires were good for analysis. Demographics of respondents and their households are presented in Table 2.

Table 2: Demographics of Respondents (n=400)

<i>Gender</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>
Male	234	58.5	58.5
Female	166	41.5	41.5
<i>Age</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>
≤ 25	48	12.0	12.0
26–35	150	37.5	37.5
36–45	117	29.3	29.3
46–55	58	14.5	14.5
> 55	27	6.8	6.8
<i>Marital Status</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>
Single	74	18.5	18.5
Married	318	79.5	79.5
Other	8	2.0	2.0
<i>Occupation</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>
Agriculture	93	23.3	23.3
Small enterprise	62	15.5	15.5
Cottage industry	7	1.8	1.8
Government sector	27	6.8	6.8
Private sector employee	182	45.5	45.5
Other	29	7.3	7.3

<i>Education</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>
≤ Primary certificate	88	22.0	22.0
Lower secondary	21	5.3	5.3
Upper secondary	77	19.3	19.3
Bachelor degree	196	49.0	49.0
> Bachelor degree	18	4.5	4.5
<i>Islamic Education</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>
Yes	347	86.8	86.8
No	53	13.3	13.3

The results from the collected questionnaire were analysed using SPSS. To analyse the different opinions of the IsMFIs' clients on the levels of economic impacts, the non-parametric Mann-Whitney U-test and Kruskal-Wallis test were used as the primary statistical tests of significance, since it is regarded as particularly powerful in testing mean differences between the different groups of the respondents without having to test for normality of distribution (Siegel and Castellan, 1988). In addition, correlation analysis and binary logistic regression was used to test the relationship and the predictors for the perception on the economic impacts of Islamic micro-financing on households, respectively. In the regression analysis, the ordinal data collected from questionnaire was transformed into dichotomous variables suitable for this analysis.

4.4. Interviewees and Analysis of Semi-structured Interviewed

Although the questionnaire provided sufficient quantitative data, semi-structured interviews were conducted to complement and enhance the information obtained from the questionnaire. Triangulation of methods is employed to confirm, cross-validate and corroborate the findings in this study. It is also a means of off-setting the weaknesses inherited within one method with the strengths of the other method (Creswell, 2003).

Judgmental sampling was used as a basis for the selection of the size of respondents for the interview. The respondents were selected from those customers who had used micro-financing several times so that they presumably have adequate knowledge about the operations of the IsMFIs. The face-to-face semi-structured interviews were scheduled during August and September 2011. The main interview questions comprised 8 sections. The relevant section (Section 5) contained the questions on perceptions of the clients on the levels of economic impacts of Islamic micro-financing. Some of the questions were designed to probe the pathway of economic impact i.e. direct or indirect. The opening question asked was related to the experience applying for Islamic micro-financing, and this was followed by a series of questions. Forty clients were interviewed. Each interview session lasted approximately 50 minutes. All interviews were taped-recorded and only 37 interviews were clear and good for

further analysis.

The response from the interviews were then transcribed and verified by a Malay-speaking Thai colleague. The transcripts were then translated into English and reviewed by an English-speaking Thai to ensure that the translations were accurate. The data were then coded and categorised to find the general patterns of the interviewees' perceptions on the impact of Islamic micro-financing on economic factors.

V. Empirical results

5.1. Descriptive Analysis

Respondents were asked to indicate on a five-point scale their agreement and disagreement with the statements. Based on the results, it can be concluded that the majority of the respondents perceive that Islamic micro-financing could provide an impact on their economic wellbeing by increasing their households' income, enabling them to accumulate assets, build or buy houses, and enhance their self-employment opportunities. The impacts on productive assets (mean = 4.01) and the impacts on housing (mean = 3.95) were ranked the highest two statements. Nevertheless, high responses of 'neutral' on the impacts on income and self-employment suggest that the link between micro-financing and economic wellbeing of the respondents' households be an indirect one.

Table 3: Descriptive Analysis: Impacts of Micro-financing on Respondents' Households

<i>Factor</i>	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>	<i>Mean</i>	<i>SD</i>
(1) Micro-financing improves your household's income.	4 (1.0%)	16 (4.0%)	127 (31.8%)	211 (52.8%)	42 (10.5%)	3.68	.755
(2) Micro-financing increases accumulated productive assets in your household.	4 (1.0%)	4 (1.0%)	67 (16.8%)	232 (58.0%)	93 (23.3%)	4.01	.729
(3) Micro-financing enables you to build, buy or repair a house.	2 (0.5%)	9 (2.3%)	82 (20.5%)	223 (55.8%)	84 (21.0%)	3.95	.741
(4) Micro-financing increases self-employment within your household.	3 (0.8%)	6 (1.5%)	103 (25.8%)	226 (56.5%)	62 (15.5%)	3.84	.719

5.2. Kruskal-Wallis Test and Mann-Whitney U-Test

When investigating their opinions across the demographic categories, the results of the Kruskal-Wallis test and Mann-Whitney U-test indicate that three categories, namely, 'annual household income' (p-value = .004), 'gender' (p-value < .001), and 'occupation' (p-value = -.034), achieved significant results. The results of the tests are exhibited in Table 4. The detailed results are provided in Appendix 1.

Table 4: Significant Statistical Results between Clients' Demographic Characteristics and Households' Impact Variables for Micro-financing

<i>Categorical Variables⁽²⁾</i>	<i>Impact Variables⁽¹⁾</i>			
	<i>LO1</i>	<i>LO2</i>	<i>LO3</i>	<i>LO4</i>
<i>AHI</i>	$\leq 40^*$	----	----	----
<i>AGE</i>	----	----	46–55*	----
<i>EDU</i>	----	----	----	----
<i>HME</i>	----	----	----	----
<i>ALA</i>	----	----	----	----
<i>TLA</i>	----	----	----	$\leq 2^*$
<i>JOI</i>	----	----	----	$>10^*$
<i>APR</i>	----	----	----	----
<i>ANP</i>	----	----	----	----
<i>SEX</i>	Male*	Male*	Male*	Male*
<i>MARI</i>	----	----	----	----
<i>OCC</i>	Govt.*	----	----	----
<i>RED</i>	----	----	----	----
<i>SME</i>	----	----	----	----

(1) **LO1** Micro-financing improves income, **LO2** Micro-financing increases productive assets, **LO3** Micro-financing enables housing, **LO4** Micro-financing increases self-employment.

(2) **AHI** Annual Household Income, **AGE** Age of Respondent, **EDU** Years in Education, **HME** Household Size, **ALA** Agricultural Land Size, **TLA** Total Land Size, **JOI** Membership Length, **APR** Total Productive Assets, **ANP** Total Non-Productive Assets, **SEX** Gender, **MARI** Marital Status, **OCC** Main Occupation, **RED** Religious Education, **SME** SME Ownership.

* The star sign indicates a reported statistical significance at .05 significance level.

The results of the tests indicate that there are statistically significant differences across gender subgroups for all economic factors. The investigation of the mean-value scores reveals that the male subgroup registered the highest mean ranks in all variables, suggesting that households of male clients have a higher likelihood of improving their income, productive assets, housing and self-employment after acquiring micro-financing.

Moreover, a significant result is reported for annual household income for income, indicating that there are differences across income groups as regards improved household income from micro-financing. Detailed observation of mean rank indicates that the households that earn an annual THB 40,000 or lower (poor group) register the highest mean rank score. A conclusion can be made that the poor tend to improve their household income from micro-financing.

The results also confirm that there is a statistical difference in terms of housing ability from the micro-financing across age groups. The mean value scores point out that the '46–55' age group recorded the largest score, suggesting that this group of clients are more likely to buy, build, or expand houses from the micro-financing.

Statistically significant differences are also reported for total land size and membership length in the self-employment variable. The mean rank scores of total land size reveal that clients who own 2 *rai* of land or less are most likely to improve self-employment

opportunities in households. As for membership length, the mean scores indicate that the clients who have participated in IsMFIs over 10 years are more likely to use micro-financing for self-employment.

The final category in which a statistically significant difference has been found is occupation for annual income category. Detailed observation of mean value scores reveals that government employees greatly enhance household incomes from micro-financing.

In summary, the results of the K-W Test and U-Test indicate that many factors tend to differentiate levels of economic impacts of Islamic micro-financing. These factors can be categorised into two main categories, i.e. exposure and needs. Male (gender), government (occupation), and over 10 years (membership length) are viewed as having better exposure to products and services as well as procedures of IsMFIs; they are therefore able to utilise micro-financing to improve their households' economic wellbeing. Accordingly, the evidence shows that the clients whose household incomes are lower than THB 40,000 can increase their incomes whilst those aged in the range 46–55 years acquire housing from micro-financing. The clients who have 2 *rai* of land or less can seek self-employment opportunities from micro-financing. These items relate to 'needs' of the clients at that stage and conditions of households.

5.3. Correlation Analysis

The Spearman rank order correlation (ρ) results examined in this section are between all characteristic variables and micro-financing impact variables (LO1-LO4). The results show that there are positive correlations between gender and all 4 impact variables, i.e. income ($\rho = -.241$, $p < .01$), productive assets ($\rho = -.212$, $p < .01$), housing ($\rho = -.164$, $p < .01$), and self-employment ($\rho = -.167$, $p < .01$). The absolute values of the coefficients fall within the range of small correlation. As gender coding is '1' for male and '2' for female, the overall results of correlation suggest that low levels of impact relate to female respondents and the strength of the relationship is small in all cases. The detailed results are provided in Appendix 2.

As for membership length, there are significant results for 2 impact variables, namely income ($\rho = .109$, $p < .05$) and self-employment ($\rho = .193$, $p < .01$). The results suggest that the relationships between membership length and those variables are positive. Again the correlations are reported to be small as the absolute values of ρ are lower than .29.

The results of correlation also show that there are positive relationships between annual household income and income ($\rho = .160$, $p < .01$), and education and income ($\rho = .110$, $p < .05$). This implies that high levels of income are associated with high levels of both annual household income and education of the respondents. The association, which can be noted from the absolute values of correlation coefficients, i.e. .160 and .110, is rather small.

Other positive associations have been found between marital status and housing (ρ

= .101, $p < .05$), and total productive assets and micro-financing impact on productive assets ($\rho = .140$, $p < .140$). The results imply that married clients are associated with higher levels of impact of micro-financing on housing ability of households while clients with higher total productive assets are correlated to micro-financing impact on productive assets. However, the strength of the associations is low. The final significant relationship is between total land size and impact on self-employment ($\rho = -.113$, $p < .05$). As the relationship is negative, it suggests that smaller total land size relates to higher level of micro-financing impact on self-employment.

In summary, the results of correlation tend to confirm the initial analysis of the K-W Test and U-Test that there is a relationship between economic impact factors and gender. The male respondent group has a positive relationship with these factors. Other factors such as membership length, annual household income, and total land size are found to be associated with some economic impact variables. In general, the results seem to suggest that elements of exposure from the role of males in Muslim society and diversity of needs within households are likely to be associated with the levels of economic impacts that households may receive from micro-financing acquisition.

Table 5: Spearman Rank Order Correlation Results: Impacts of Micro-financing on Households

<i>Categorical Variables⁽²⁾</i>	<i>Impact Variables⁽¹⁾</i>			
	<i>LO1</i>	<i>LO2</i>	<i>LO3</i>	<i>LO4</i>
<i>AHI</i>	.160**	----	----	----
<i>AGE</i>	----	----	----	----
<i>EDU</i>	.110*	----	----	----
<i>HME</i>	----	----	----	----
<i>ALA</i>	----	----	----	----
<i>TLA</i>	----	----	----	-.113*
<i>JOI</i>	.109*	----	----	.193**
<i>APR</i>	----	.140*	----	----
<i>ANP</i>	----	----	----	----
<i>SEX</i>	-.241**	-.212**	-.164**	-.167**
<i>MARI</i>	----	----	.101*	----
<i>OCC</i>	----	----	----	----
<i>RED</i>	----	----	----	----
<i>SME</i>	----	----	----	----

(1) **LO1** Micro-financing improves income, **LO2** Micro-financing increases productive assets, **LO3** Micro-financing enables housing, **LO4** Micro-financing increases self-employment.

(2) **AHI** Annual Household Income, **AGE** Age of Respondent, **EDU** Years in Education, **HME** Household Size, **ALA** Agricultural Land Size, **TLA** Total Land Size, **JOI** Membership Length, **APR** Total Productive Assets, **ANP** Total Non-Productive Assets, **SEX** Gender, **MARI** Marital Status, **OCC** Main Occupation, **RED** Religious Education, **SME** SME Ownership.

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

5.4. Logistic Regression Analysis

Originally, the impact variables are measured as ordinal variables, and ordinal logistic regression was assumed to be suitable. However, the test results of ordinal logistic regression were found to be inappropriate for the objectives of this study.⁴ The researcher therefore employed binary logistic regression in this analysis. The ordinal dependent variables were therefore transformed into dichotomous variables suitable for the analysis. The data '1', '2', and '3', which represent 'strongly disagree', 'disagree', and 'neutral' respectively, have been recorded as '0' indicating 'no impact'. The 'neutral' responses have been included in this group to ensure that the results of this analysis are not overestimated to prefer impact outcome. Accordingly, the data originally coded as '4' and '5' standing for 'agree' and 'strongly agree' respectively have been transformed into '1' for 'yes' - there is an impact of an independent variable on a dependent variable. The categorical variables that have been transformed to make them suitable for this analysis are gender (0=female, 1=male), marital status (0=otherwise, 1=married), religious education (0=no, 1=yes), SME ownership (0=no, 1=yes), and occupation (0=otherwise, 1=regular income).

Referring to the results of regression of the overall model of the economic impact variables, the values of the overall models' goodness-of-fit are lower than .05. This indicates that the model is significant. The whole models explain between 11.7%–16.5% (Cox and Snell R^2) and 17.2%–25.2% of variance in the impact variables. The models correctly classify between 69.7%–82.3% of the cases.

Accordingly, the results show that three independent variables found to be strong predictors are gender, occupation, and age. Gender tends to contribute to the predictive ability of the models across economic impacts ($< .05$ significance level) and all coefficients of gender have positive signs, indicating that the male respondent households are likely to benefit from micro-financing. Occupation has been found to be significant for all economic impact variables ($< .05$ significance level). This suggests that the clients who work in organisations that pay a regular income, i.e. government office and private sector, have their households' economic wellbeing changed as a result of Islamic micro-financing.

As for other predictors, age is found to be significant in two impact variables, i.e. productive assets and housing, and the coefficients have positive signs. This indicates that, the older the respondents, the higher impact of micro-financing on their ability to acquire productive assets and housing. Total productive assets are reported to be significant for productive asset ($< .10$ level of significance) and housing ($< .05$ level of significance). Membership length and agricultural land size are significant for housing and self-employment respectively ($.10$ level of significance).

4 Model-fit results of some variables such as impacts of micro-financing on consumption, healthcare and religiosity did not show significant results. See Hosmer and Leimeshow (2000) and Menard (2002) for details.

Table 6: Logistic Regression for Respondent Characteristic Predictors and Economic Impacts

INDEPENDENT VARIBALES ⁽²⁾	DEPENDENT VARIABLES ⁽¹⁾							
	LO1		LO2		LO3		LO4	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
AHI	.000	.186	.000	.377	.000	.537	.000	.492
AGE	.006	.792	.052	.049**	.055	.027**	.021	.342
EDU	.043	.307	.031	.550	.044	.359	.029	.515
HME	.012	.885	-.039	.696	-.039	.680	-.075	.387
ALA	-.003	.921	-.005	.890	.044	.300	-.055	.056*
TLA	.003	.877	.004	.872	-.018	.407	.024	.196
JOI	-.008	.818	-.027	.522	-.070	.066*	.032	.413
APR	.000	.559	.000	.100*	.000	.010**	.000	.437
ANP	.000	.618	.000	.492	.000	.381	.000	.360
SEX	1.434	.000**	1.268	.001**	.905	.012**	.915	.005**
MARI	.546	.214	.463	.359	.467	.349	.530	.233
RED	.145	.747	-.446	.442	-.876	.164	-.345	.482
SME	-.201	.555	.131	.752	-.463	.220	.471	.208
OCC	.808	.035**	1.523	.002**	1.735	.000**	1.026	.014**
<u>Overall model</u>								
<u>goodness-of-fit</u>								
Chi-Square	45.786		32.885		45.657		31.642	
(Sig)	.000		.003		.000		.005	
Cox and Snell	.165		.121		.165		.117	
Nagelkerke	.226		.199		.252		.172	
Overall percentage predicted	72.0		82.3		81.5		74.4	

(1) **LO1** Micro-financing improves income, **LO2** Micro-financing increases productive assets, **LO3** Micro-financing enables housing, **LO4** Micro-financing increases self-employment.

(2) **AHI** Annual Household Income, **AGE** Age of Respondent, **EDU** Years in Education, **HME** Household Size, **ALA** Agricultural Land Size, **TLA** Total Land Size, **JOI** Membership Length, **APR** Total Productive Assets, **ANP** Total Non-Productive Assets, **SEX** Gender, **MARI** Marital Status, **OCC** Main Occupation, **RED** Religious Education, **SME** SME Ownership.

** Significant at 5% level of significance ($p \leq .05$)

* Significant at 10% level of significance ($p \leq .10$)

5.5. Interview Analysis

Based on the last two micro-financings that they had taken out, the interviewees were asked to identify economic impacts and the pathway of economic impacts on their households. The results show that Islamic micro-financing has an impact on household assets, income, self-employment and housing.

The clients of IsMFIs utilised Islamic micro-financing to acquire productive and non-productive assets. The productive assets include car, motorcycle, and equipment to be used for business and occupational purposes. The non-productive assets bought by IsMFIs' clients through micro-financing often included household goods such as furniture, refrigerator, and jewellery.

The clients' household income may increase as an outcome of Islamic micro-financing. Assets, capital or liquidity injection in clients' business and housing expansion will bring

about increased economic activities within households. As a result, income of the households improves.

Islamic micro-financing has indirectly improved self-employment opportunities within clients' households. According to the interviewees, self-employment in clients' households can improve in three pathways, i.e. acquired productive assets, capital or liquidity injection, and expanded housing. Many clients buy productive assets and use the assets for households' occupational activities such as rearing fish and selling sweets. SME owners use financing to buy goods considered as capital or liquidity injection. In addition, some expand their houses and use part of them as small shops selling miscellaneous items needed in the daily life of the villages.

As for the pathway of impact on clients' housing, in one instance, the interviewees can purchase houses built by IsMFIs and repay by monthly instalments or on the basis of *murabahah* contract. In another instance, the interviewees can purchase hardware and building materials on the same contract and use those materials to build a new house or expand the existing house. The above circumstances underline the direct impacts of Islamic micro-financing on clients' housing.

In summary, the economic impacts of Islamic micro-financing by IsMFIs may be in terms of increased assets, improved income, enhanced self-employment and better housing. The impacts on assets, self-employment and housing are perceived to be largely direct ones. Nevertheless, the impact on income of household is believed to be indirect.

VI. Summary and Conclusions

This paper investigates whether a different opinion exists among IsMFIs' customers on the economic impacts of *murabahah* micro-financing and what factors influence the levels of these impacts factor, based on perceptions of the customers. In general, the survey results indicate significant differences in the opinions on economic impacts among the customers of different gender, age, occupation, high productive assets and membership length. Male clients are able to improve their economic welfare to a certain level, whilst older respondents are more likely to benefit from *murabahah* micro-financing. In addition, those earning regular salaries in governmental and private organisations and those holding more productive assets can also enhance the levels of economic impacts from Islamic micro-financing.

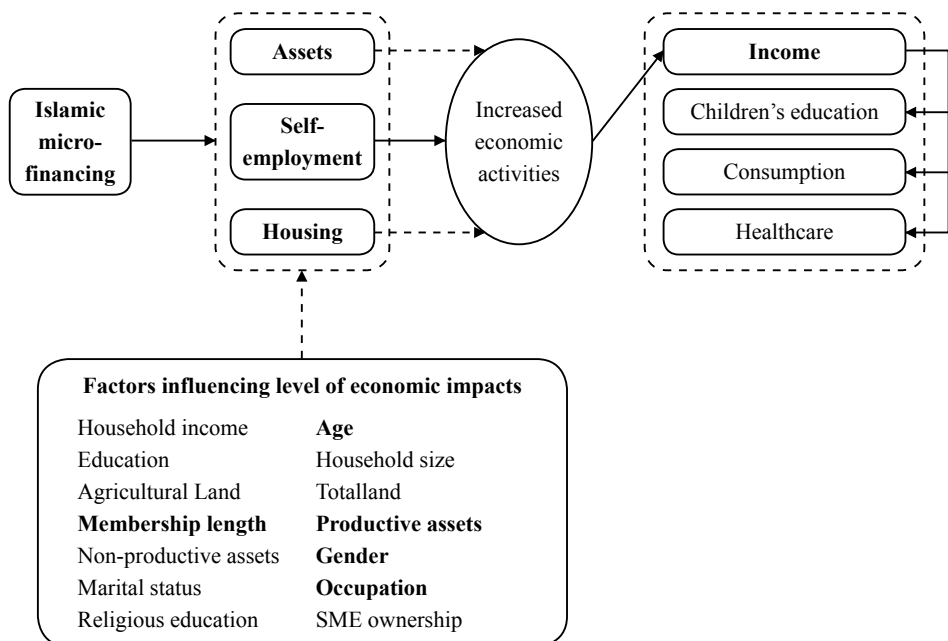
These demographic variables in fact provide the evidence that the levels of impacts of *murabahah* micro-financing depend significantly on the levels of exposure, affordability and financial needs the customers may have. The customers who have adequate information about operations and policy of IsMFIs in general and the conditions and procedures of *murabahah* micro-financing in particular *i.e.* male customers and longer membership have more likelihood to improve their lives from micro-financing. Lower household income groups, high

productive assets and occupation that provides regular salary represent the financial needs and affordability respectively.

Interestingly, the results of the interviews reveal that the impacts of *murabahah* micro-financing are either direct or indirect. The clients of IsMFIs use Islamic micro-financing to acquire productive assets, obtain business capital or liquidity injections, and expand their houses, using part of them as shops. Hence, they are able to increase their economic activities within the household, resulting in an increase in the household's income. Consequently, they may spend their income to enhance their well-being such as consumption, children's education and healthcare. Figure 1 illustrates the economic impacts of Islamic micro-financing in Thailand described in this study.

Though this study was conducted on non-poor Muslims in a non-Muslim country, the results in this study might be relevant to some of the world poor Muslims. This is because Thai Muslims are considered to be among the poorest group of people in a country that has already fulfilled the Millennium Development Goal since 2002. In fact, Islamic microfinance allows them to actively participate in the country financial market and improve their lives. Developing Muslim countries of similar characteristics across the globe may use Thailand Islamic microfinance model in improving the lives of population.

Figure 1: Economic impacts of Islamic micro-financing in Thailand



This study has several limitations. First, it focuses on only demographic factors in the environment that contributes to the impact of *murabahah* micro-financing on income. Future research could consider other factors that may affect the impact levels. I limited my sample to only customers (demand-side study), future research could look at the opinions and perceptions of staff and board members of these IsMFIs (supply-side study) so that the findings in this study can be validated.

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Appendix 1

Micro-financing increases income

Statement	Subgroup	N	Mean Rank	Z, X^2	df	Asymp. Sig.
Micro-financing increases income.	Annual household income (in baht)					
	Poor ($\leq 40,000$)	3	232.50	15.236	4	.004
	Near poor (40,001-100,000)	28	173.50			
	Average (100,001-300,000)	187	169.74			
	Near rich(300,001-500,000)	91	215.76			
	Rich ($> 500,000$)	61	191.86			
	Total	370				
	Gender			-4.821		.000
	Male	234	221.76			
	Female	166	170.54			
	Total	400				
	Age groups			2.458	4	.652
	≤ 25	48	188.73			
	26-35	150	205.71			
	36-45	117	197.09			
	46-55	58	193.73			
	> 55	27	221.76			
	Total	400				
	Marital status			5.125	2	.077
	Single	74	182.53			
	Married	318	206.02			
	Other	8	147.38			
	Total	400				
	Education			6.994	4	.136
	$\leq$ Primary certificate	88	179.38			
	Lower secondary certificate	21	186.40			
	Upper secondary certificate	77	203.25			
	Bachelor degree	196	207.04			
	$>$ Bachelor degree	18	237.22			
	Total	400				
	Household size			2.972	3	.396
	≤ 3	2	168.50			
	3-5	167	197.16			
	6-9	211	199.86			
	>9	20	238.30			
	Total	400				
	Agricultural land size			4.217	3	.239
	≤ 2 rai	89	158.52			
	2.01-5.00 rai	89	155.00			
	5.01-10.00 rai	80	167.19			
	> 10.00 rai	70	181.11			
	Total	328				
	Total land size			3.641	3	.303
	≤ 2 rai	50	174.14			
	2.01-5.00 rai	72	163.83			
	5.01-10.00 rai	88	150.63			

Statement	Subgroup	N	Mean Rank	Z, X^2	df	Asymp. Sig.
	> 10.00 <i>rai</i>	118	171.17			
	Total	328				
	Occupation					
	Agriculture	93	198.69	12.048	5	.034
	Small enterprise	62	184.79			
	Cottage industry	7	164.29			
	Government services	27	260.76			
	Private sector employee	182	202.01			
	Other	29	183.07			
	Total	400				
	Membership length					
	≤ 2 years	153	190.36	2.840	3	.417
	3-5 years	129	202.54			
	6-10 years	73	213.42			
	>10 years	45	208.18			
	Total	400				
	Religious education					
	Having religious education	347	203.07	-1.255		.209
	Not having	53	183.69			
	Total	400				
	SME ownership					
	Own	126	203.75	-.422		.673
	Not own	274	199.00			
	Total	400				
	Productive assets (in baht)					
	≤ 40,000	90	153.03	2.067	4	.723
	40,001-100,000	53	148.94			
	100,001-300,000	58	165.55			
	300,001-500,000	37	168.69			
	> 500,000	76	157.17			
	Total	314				
	Non-productive assets (in baht)					
	≤ 40,000	33	156.24	2.521	4	.641
	40,001-100,000	42	145.88			
	100,001-300,000	62	142.82			
	300,001-500,000	61	141.59			
	> 500,000	100	157.76			
	Total	298				

Micro-financing enables you to purchase or rent productive assets

Statement	Subgroup	N	Mean Rank	Z, X ²	df	Asymp. Sig.
Micro-financing enables you to purchase or rent productive assets.	Annual household income (in baht)					
	Poor ($\leq 40,000$)	3	176.50	2.572	4	.632
	Near poor (40,001-100,000)	28	184.11			
	Average (100,001-300,000)	187	178.49			
	Near rich(300,001-500,000)	91	196.89			
	Rich ($> 500,000$)	61	191.09			
	Total	370				
	Gender					
	Male	234	218.84	-4.243		.000
	Female	166	174.65			
	Total	400				
	Age groups					
	≤ 25	48	180.66	3.777	4	.437
	26-35	150	196.09			
	36-45	117	207.23			
	46-55	58	215.25			
	> 55	27	199.44			
	Total	400				
	Marital status					
	Single	74	179.15	4.019	2	.134
	Married	318	205.61			
	Other	8	194.75			
	Total	400				
	Education					
	$\leq$ Primary certificate	88	199.40	1.620	4	.805
	Lower secondary certificate	21	195.21			
	Upper secondary certificate	77	193.90			
	Bachelor degree	196	201.71			
	$>$ Bachelor degree	18	227.08			
	Total	400				
	Household size					
	≤ 3	2	116.75	3.408	3	.333
	3-5	167	200.40			
	6-9	211	198.31			
	>9	20	232.78			
	Total	400				
	Agricultural land size					
	≤ 2 rai	89	158.20	6.006	3	.111
	2.01-5.00 rai	89	150.66			
	5.01-10.00 rai	80	178.63			
	> 10.00 rai	70	173.96			
	Total	328				
	Total land size					
	≤ 2 rai	50	164.10	1.051	3	.789
	2.01-5.00 rai	72	163.67			
	5.01-10.00 rai	88	157.94			
	> 10.00 rai	118	170.06			

Statement	Subgroup	N	Mean Rank	Z, X^2	df	Asymp. Sig.
	Total	328				
	Occupation					
	Agriculture	93	186.88	4.602	5	.466
	Small enterprise	62	208.11			
	Cottage industry	7	173.86			
	Government services	27	229.06			
	Private sector employee	182	200.95			
	Other	29	204.95			
	Total	400				
	Membership length					
	≤ 2 years	153	196.74	1.748	3	.626
	3-5 years	129	201.17			
	6-10 years	73	196.03			
	>10 years	45	218.59			
	Total	400				
	Religious education					
	Having religious education	347	200.25	-.126		.899
	Not having	53	202.16			
	Total	400				
	SME ownership					
	Own	126	203.70	-.423		.672
	Not own	274	199.03			
	Total	400				
	Productive assets (in baht)					
	≤ 40,000	90	145.38	6.218	4	.183
	40,001-100,000	53	149.81			
	100,001-300,000	58	154.92			
	300,001-500,000	37	169.45			
	> 500,000	76	173.36			
	Total	314				
	Non-productive assets (in baht)					
	≤ 40,000	33	155.68	1.960	4	.743
	40,001-100,000	42	141.39			
	100,001-300,000	62	144.35			
	300,001-500,000	61	145.36			
	> 500,000	100	156.58			
	Total	298				

Micro-financing enables you to build, buy, and repair a house for household

Statement	Subgroup	N	Mean Rank	Z, X ²	df	Asymp. Sig.
Micro-financing enables you to build, buy, and repair a house for household.	Annual household income (in baht)					
	Poor ($\leq 40,000$)	3	189.50	1.429	4	.839
	Near poor (40,001-100,000)	28	193.32			
	Average (100,001-300,000)	187	186.83			
	Near rich(300,001-500,000)	91	188.81			
	Rich ($> 500,000$)	61	172.70			
	Total	370				
	Gender					
	Male	234	214.88	-3.285		.001
	Female	166	180.22			
	Total	400				
	Age groups					
	≤ 25	48	163.07	10.998	4	.027
	26-35	150	211.73			
	36-45	117	192.79			
	46-55	58	221.09			
	> 55	27	193.81			
	Total	400				
	Marital status					
	Single	74	175.85	5.403	2	.067
	Married	318	206.60			
	Other	8	186.19			
	Total	400				
	Education					
	$\leq$ Primary certificate	88	195.51	1.937	4	.747
	Lower secondary certificate	21	186.33			
	Upper secondary certificate	77	199.34			
	Bachelor degree	196	202.16			
	$>$ Bachelor degree	18	228.28			
	Total	400				
	Household size					
	≤ 3	2	205.00	1.518	3	.678
	3-5	167	199.87			
	6-9	211	198.33			
	>9	20	228.18			
	Total	400				
	Agricultural land size					
	≤ 2 rai	89	165.80	.191	3	.979
	2.01-5.00 rai	89	161.74			
	5.01-10.00 rai	80	163.76			
	> 10.00 rai	70	167.20			
	Total	328				
	Total land size					
	≤ 2 rai	50	179.75	2.558	3	.465
	2.01-5.00 rai	72	166.68			
	5.01-10.00 rai	88	156.00			
	> 10.00 rai	118	163.05			

Statement	Subgroup	N	Mean Rank	Z, X^2	df	Asymp. Sig.
	Total	328				
	Occupation					
	Agriculture	93	199.19	9.319	5	.097
	Small enterprise	62	169.24			
	Cottage industry	7	183.50			
	Government services	27	233.65			
	Private sector employee	182	205.97			
	Other	29	210.47			
	Total	400				
	Membership length					
	≤ 2 years	153	192.42	1.725	3	.631
	3-5 years	129	202.46			
	6-10 years	73	208.76			
	>10 years	45	208.93			
	Total	400				
	Religious education					
	Having religious education	347	200.50	-.002		.998
	Not having	53	200.47			
	Total	400				
	SME ownership					
	Own	126	187.52	-1.693		.091
	Not own	274	206.47			
	Total	400				
	Productive assets (in baht)					
	≤ 40,000	90	149.24	2.583	4	.630
	40,001-100,000	53	157.90			
	100,001-300,000	58	152.64			
	300,001-500,000	37	163.58			
	> 500,000	76	167.75			
	Total	314				
	Non-productive assets (in baht)					
	≤ 40,000	33	147.64	3.873	4	.423
	40,001-100,000	42	165.18			
	100,001-300,000	62	137.94			
	300,001-500,000	61	143.97			
	> 500,000	100	154.07			
	Total	298				

Micro-financing increases opportunity for self-employment labour in household

Statement	Subgroup	N	Mean Rank	Z, χ^2	df	Asymp. Sig.
Micro-financing increases opportunity for self-employment labour in household.	Annual household income (in baht)					
	Poor ($\leq 40,000$)	3	205.00	6.428	4	.169
	Near poor (40,001-100,000)	28	202.86			
	Average (100,001-300,000)	187	185.22			
	Near rich(300,001-500,000)	91	196.71			
	Rich ($> 500,000$)	61	160.70			
	Total	370				
	Gender			-3.338		.001
	Male	234	215.03			
	Female	166	180.02			
	Total	400				
	Age groups			7.958	4	.093
	≤ 25	48	165.31			
	26-35	150	212.19			
	36-45	117	196.92			
	46-55	58	208.03			
	> 55	27	197.43			
	Total	400				
	Marital status			3.858	2	.145
	Single	74	183.59			
	Married	318	205.42			
	Other	8	161.25			
	Total	400				
	Education			4.532	4	.339
	$\leq$ Primary certificate	88	183.32			
	Lower secondary certificate	21	211.81			
	Upper secondary certificate	77	207.51			
	Bachelor degree	196	201.53			
	$>$ Bachelor degree	18	230.08			
	Total	400				
	Household size			1.734	3	.629
	≤ 3	2	225.50			
	3-5	167	195.05			
	6-9	211	202.29			
	>9	20	224.63			
	Total	400				
	Agricultural land size			4.150	3	.246
	≤ 2 rai	89	173.59			
	2.01-5.00 rai	89	153.63			
	5.01-10.00 rai	80	173.79			
	> 10.00 rai	70	156.14			
	Total	328				
	Total land size			7.982	3	.046
	≤ 2 rai	50	189.27			
	2.01-5.00 rai	72	166.99			
	5.01-10.00 rai	88	147.35			
	> 10.00 rai	118	165.28			

Statement	Subgroup	N	Mean Rank	Z, X^2	df	Asymp. Sig.
	Total	328				
	Occupation					
	Agriculture	93	185.43	3.217	5	.667
	Small enterprise	62	199.54			
	Cottage industry	7	196.14			
	Government services	27	196.07			
	Private sector employee	182	207.74			
	Other	29	210.62			
	Total	400				
	Membership length					
	≤ 2 years	153	181.45	13.879	3	.003
	3-5 years	129	198.22			
	6-10 years	73	222.70			
	>10 years	45	235.79			
	Total	400				
	Religious education					
	Having religious education	347	202.00	-.742		.458
	Not having	53	190.69			
	Total	400				
	SME ownership					
	Own	126	205.61	-.670		.503
	Not own	274	198.15			
	Total	400				
	Productive assets (in baht)					
	≤ 40,000	90	145.49	3.339	4	.503
	40,001-100,000	53	165.56			
	100,001-300,000	58	163.93			
	300,001-500,000	37	166.26			
	> 500,000	76	156.93			
	Total	314				
	Non-productive assets (in baht)					
	≤ 40,000	33	159.17	8.838	4	.065
	40,001-100,000	42	176.63			
	100,001-300,000	62	146.54			
	300,001-500,000	61	133.04			
	> 500,000	100	146.79			
	Total	298				

Appendix 2

Spearman's rho correlation: Impacts of micro-financing

	AHI	AGE	EDU	HME	ALA	TLA	JOI	APR	ANP	SEX	MARI	OCC	RED	SME
LO1	.160**	.018	.110*	.066	.066	.005	.109*	.035	.044	-.241**	.057	.000	-.063	-.021
LO2	.073	.082	.026	.041	.098	.031	.074	.140*	.038	-.212**	.091	.040	.006	-.021
LO3	-.027	.071	.054	.037	.017	-.060	.077	.108	.004	-.164**	.101*	.062	.000	.085
LO4	-.043	.053	.065	.068	-.064	-.113*	.193**	.066	-.086	-.167**	.058	.085	-.037	-.034

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)