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An Analysis of measures of Micro Credit

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Abstract

Micro Finance Institution is an important tool to enhance the living condition of poor people in developing countries and Sri Lanka as well. From time to time Sri Lanka faced difficulties and challenges such as Tsunami and conflict situation. MFIs help poor people by giving financial and non-financial services in order to fulfill their infrastructure facilities and create self-employment activities to work independently. However, it is difficult to find out the services which are provided by the MFIs unless there will be a clear yardstick or index. Authors use questionnaire to gather information on this regards. This study intends to fill the gap that to find out the measures of micro credit in the war affected areas in Northern Sri Lanka. For this purpose, 337 respondents from five districts of Northern Province have been selected by using stratified random sampling method and the factor analysis has been used to find out the measures of micro credit. Four measures or variables have been found out by using factor reduction techniques. Researcher has twenty two variables and which was reduced as four measures such as repayment, amount, credit delivery and interest rate by using SPSS software. Finally it was concluded that the measures may be differ from situation to situation and place to place.

Key words: MFIs, Micro Credit, Poor women, loan facilities.

Introduction

Micro Finance Institutions (MFIs) have vital role among the poorest people to increase their income in Developing Countries. The poorest people are the vulnerable people who are living in poverty and unhygienic condition without nutrition, no access to education and their per capita income per day will be below US$ 1.9 (World Bank Report, 2010). MFIs play an important role against the poverty by assisting poor people to increase their wealth (Zama, 2004, cited by Haq, Hoque, and Pathan, 2008). The MFIs are empowering the poor people through the financial and non-financial facilities for poverty alleviation, health nutrition, education and self-employment opportunities. It supports to get capital and independent income and contribute economically to their family and society.

According to the State of Micro Credit Summit Campaign Report (2005) 3200 MFIs reached more than 92 million clients in 2004 of which around 73% were living in poverty when they provided the first loan to them.

Micro Finance has evolved as a key instrument to afford financial and non-financial facilities. Microcredit is one of the significant constituent empowering incomes of poor women. Micro credit schemes have been accessed by more than 65 million poor people of whom about three quarters are women (NycanderLotta, 2004). In Bangladesh, NycanderLotta, (2004) found that, microcredit schemes are extensively important, through the improvement of women's position in decision-making on household expenses and family planning. Cooperative Assistance and Relief Everywhere (CARE) is deeply committed for improving the lives of poor women, men, girls and boys. In some least developed countries in the world CARE focuses on women, because in every society they struggle against gender norms that limit their resources and opportunities for improvement, and the women's empowerment is a tremendous resource for social change and a prerequisite to fight against global poverty (CARE Report, 2005). In recent years, governments and Non-Government Organizations (NGOs) in many low income countries including Sri Lanka have introduced micro credit programs targeted to the poor. Many of these programs especially target women are more likely than men to be credit inhibited, have limited access to the labour market, and have an
discriminatory share of power in household decision making (Pitt et al., 2006).

Support of thousands of microfinance customers in Sri Lanka reveals that access to financial services facilitates poor people to boost their household income, make assets, and cut their vulnerability. According to the report of Dirk Steinwand & David Bartocha (2008) microfinance is an adaptable supporter that affords them to remake their lives, plan for their future and their children and empower them with self-esteem and confidence. The impacts of microfinance are a combination in most cases where one impact leads to another. For instance, improved income is used for enhancement of the family or children, education & health nutrition etc. Microcredit is the extension of small loans to those in poverty designed to encourage self-employment. The term microfinance usually entails very small loans to low-income clients for self-employment who lack access to traditional banking services. Microcredit is part of microfinance, which has been originated with the Grameen Bank from Bangladesh. In Bangladesh, microfinance has enabled poor people to employ in self-employment projects and allow them to create income and begin to rigid prosperity and exit poverty. According to Bagati (2003) many micro credit programs give a role to women in the economy and it will translate into positive changes in their status, empowering women like a 'magic wand'.

Microcredit is a tool for socioeconomic development. The United Nations (UN) declared 2005 the International Year of Microcredit (Delfiner, Pailhe and Peron, 2006). Though, Grameen Bank lend both men and women at equal rates initially, presently women became ninety-five percent of the bank’s clients. Seventy-five percent of the microcredit recipients are women in worldwide (ibid, 2006). From 1980s, other than lending to women who have higher repayment rates, and accepts smaller loans than men. Further, many microcredit institutions have used the goal of empowering women to justify their disproportionate loans to women.

In the post war context manyMFIs attempt to help to the poor people specifically women in Sri Lanka. In Sri Lanka, 41% of the total clients obtain their funds from a group loan scheme out of which 81% state that they are benefiting from the group loan scheme (Czura, 2010). However, majority of the clients evidenced the benefit in the form of loan access through the group. Although most ProMiS partner MFIs offer non-financial services, only 27% of total borrowers use any of these services. Over 80% declared group meetings as the non-financial service received.

**Research Problem**

Access to credit is an important mechanism for reducing women’s poverty and to empower them. In this regard, the delivery of microfinance is one of the approaches in empowering rural women. Lack of capital is a serious constraint to the development of poor women in rural areas who find little or no access to credit (Fletschner, 2008). Credit can help women take-up farm and allied activities such as keeping milk cattle, poultry or independent small enterprises, enabling them to respond to the opportunities created by the process of development. Under post war development the government has initiated various activities to enhance the standard of living of the women who have been affected by the war situation that killed or disabled their male partners and they have taken the responsibilities in the family as the household head.

However, there is no sufficient research to look beyond microfinance’s economic activities and micro credit activities at collectively. Most of the authors investigated the developments and situation of the regions in their reports and articles which are World Bank, United Nations Development programme (UNDP) and CARE Reports. Under post war development there are some projects such as Small Scale Business Development for Women Rural Development Societies (WRDSs). Support for the Widows’ Society, samurdh, Re-Awakening Project (NEIAP), DiviNeguma National programme, Conflict Affected Region Emergency Project implemented by Ministry of Economic Development etc., intended to empower poor people in Sri Lanka with the help of foreign aids mostly Asian Development Bank help for this renovations and rehabilitations. The micro credit is considered as one of the major tools for the economic development through the enhancement of living condition of poor people specially women in the country.

The measurement of micro credit is an important tool to find out the impact or effects on dependent variable such as the empowerment or development. There are few studies that empirically support to find out the measurement of micro credit in helping the poor in self-employment, though the enormous contribution of the sector has been the organization of the poor, particularly women to access critical financial services. Some of the empirical evidence which shows that the involvement of women associated with the microfinance programmes has been on the increase, resulting in a greater awareness and confidence, forecasting them is not properly recognized. The different measures have been used in different situations and different places. Eg. Income, repayment, loan size, savings and demographic factors are used to measure the micro credit in different situation by different authors. The researcher tried to find out the measures of micro credit in the war – torn area of Northern Province and all five districts have been selected. This study investigates: “What are the variables used to measure the micro credit activities in Northern Sri Lanka.”

**Objectives of the study**

Every study must have to formulate its objective in order to be perceptible and more rational and fruitful. Moreover, the research community considers the objectives of the studies, as an appropriate and good enough as substantiation of the researcher’s logical intellect of rationale and road map (Saunders & Lewis, 2007). The main objective of the study is to identify the factors which measure the micro-credit activities in Northern Sri Lanka and the specific objectives are;

- To identify the important variables which to be considered as measures of micro credit by factor reduction tool.
- To investigate the relationship among the measures of micro credit.
Literature Review

The impact or effects of microcredit can be measured by using some variables these are called as measures of microcredit. Different authors investigated different measures of microcredit in order to find out the impact and influence of microcredit on its dependent variable. Collateral, repayment, and loan package have been used to measure the microcredit in the research of rural women’s access to financial services such as: credit, savings and insurance (Fletch and Kenney, 2011).

Microcredit performance measures have been identified by ACCION International and quoted in OECD (1996), on which the quantitative measures have been identified. Active borrowers, Conversion ratio (loans lent as a % of applicants or outreach contacts), Percentage of staff time spent of outreach and group formation, Number of clients served, percentage increase in customer incomes, Number of businesses created maintained, or grown, Jobs created (including self – employment), qualitative gains / personal development have been used to measure the microcredit performance.

Goetz and Sengupta (1996) presented control over loan, time for repayment as measures of microcredit to find out the impact on women empowerment. Further Asim, (2008) used access to microcredit as a measure of microcredit by using case study method.

As per Tundui and Tundui (2013) the loan repayment and profit level of their business is essential that the measures used by microfinance programmes to ensure that borrowers repay their loans. Similarly, Bali Swain (2004) questioned the use of repayment rate to judge the effectiveness of microfinance on poverty alleviation. Repayment performance is also used as a key variable for donors and international funding agencies to assess the viability and sustainability of microfinance programmes including determining MFIs that still depend on them for their operations (Bali Swain, 2004; Godquinn, 2004).

There is no evidence to use the specific micro credit measures in order to find out the impact or effect with other variables. These variables have been derived from the primary data which, gathered through the questionnaire. Researcher tried to fill this gap by using factor reduction tool.

Research Method

The population of this study is about the microfinance clients in the Northern Part of Sri Lanka. The concern of this study is poor women and the population of this study is 47,375 in Northern part of Sri Lanka. There are five districts which are Jaffna, Kilinochchi, Mannar, Mullaitivu and Vavuniya in Northern part of Sri Lanka. The respondents of the study were stratified randomly selected to be entirely women.

According to the records of Industrial Department – Northern Province, the women who are the clients of microcredit involving self-employable activities in Jaffna, Kilinochchi, Mannar, Mullaitivu and Vavuniya Districts around 625, 275, 238, 340 and 178 persons respectively. However, the selection of sample population is123, 52, 51, 73 and 38 in Jaffna, Kilinochchi, Mannar, Mullaitivu and Vavuniya districts respectively and altogether 337.

The MFIs which were Samurdhi Banks (SBs), Regional Development Banks (RDBs) and the WRDSs were chosen because of its wide area coverage with clients from Jaffna, Kilinochchi, Mullaitivu, Mannar and Vavuniya Districts. The Primary data were collected with the help of WRDSs, Rural Development Officers (RDOs) and Industrial Development Board (IDBs) officers to gather necessary information. Data were collected regarding demographic, personal information, loan size, credit access, usage of loan, interest rate, collateral and repayment. The five point likert scale was used to find out the proper way to measure the microcredit facilities to the clients. SPSS software was used to reduce the factors which to be found out as measures to investigate the microcredit facilities.

To measure the microcredit programme, researcher has 22 variables. Through the exploratory factor analysis the variables were reduced into four. Cronbach’s Alpha scale was used as a measure of reliability. Its value was estimated as 0.953 for total dimensions as it was greater than 0.6 the scale used by this study was highly reliable for factor analysis. After checking the reliability of scale, an examination of the correlation matrix reveals moderately significant correlations between some of the dimensions of microcredit. Further, it was clear that a sample size of three hundred and thirty seven was used in the study is good for a suitable factor solution because all communalities are above 0.6.

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is still another useful method to show the appropriateness of data for factor analysis. In this study, the value of KMO for overall matrix is 0.891 from Table 2 and thereby indicating that the sample taken to process the factor analysis is statistically significant. The table 1 below shows that the test value of chi-square 3.454E3 (p = 0.000) is highly significant indicating that the data is appropriate for the factor analysis in the present study.

Table 1: KMO and Bartlett’s Test-Microcredit

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</td>
<td>0.891</td>
</tr>
<tr>
<td>Bartlett’s Test of Sphericity</td>
<td>Chi-Square 3.454E3</td>
</tr>
</tbody>
</table>

Source: Field study

Results and Discussion

Factors measuring the Micro Credit

After examining the reliability of the scale and testing appropriateness of data as above, it was carried out
factor analysis to identify the dimensions that influence on Micro Credit. For this purpose, researcher employed Principal Component Analysis (PCA) followed by the Varimax rotation, when the original dimensions are analyzed by the PCA in this regards has been revealed in table 2.

### Table 2: Total variance explained after Extraction-Microcredit

<table>
<thead>
<tr>
<th>Components (Dimensions of Micro Credit)</th>
<th>Initial Eigenvalues</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Expectations are being met</td>
<td>7.836</td>
</tr>
<tr>
<td>Repay the loan regularly</td>
<td>2.060</td>
</tr>
<tr>
<td>Repay the loan installment from the income</td>
<td>1.532</td>
</tr>
<tr>
<td>Getting loan easily through revolving fund</td>
<td>1.278</td>
</tr>
<tr>
<td>Increasing savings with the repayment</td>
<td>.984</td>
</tr>
<tr>
<td>Attending group meetings regularly</td>
<td>.935</td>
</tr>
<tr>
<td>No need to spend money for getting loan</td>
<td>.753</td>
</tr>
<tr>
<td>No need to visit for getting loan</td>
<td>.748</td>
</tr>
<tr>
<td>Interest rate is very low</td>
<td>.701</td>
</tr>
<tr>
<td>Understanding interest calculation</td>
<td>.630</td>
</tr>
<tr>
<td>Distributing loan for all without discrimination</td>
<td>.568</td>
</tr>
<tr>
<td>Loan officials have positive attitude</td>
<td>.566</td>
</tr>
<tr>
<td>No sexual violence by loan officials</td>
<td>.496</td>
</tr>
<tr>
<td>Loan is provided without any delay</td>
<td>.459</td>
</tr>
<tr>
<td>The sufficient loan is provided for starting or improving business</td>
<td>.402</td>
</tr>
<tr>
<td>Easy to provide the collateral for the loan</td>
<td>.380</td>
</tr>
<tr>
<td>Usage of loan only for self-employment</td>
<td>.328</td>
</tr>
<tr>
<td>Return on self-employment is greater than the loan interest</td>
<td>.296</td>
</tr>
<tr>
<td>Easy to maintain the sustainability on finance because the sufficient loan provided whenever needed</td>
<td>.282</td>
</tr>
<tr>
<td>No idea to leave from the job</td>
<td>.238</td>
</tr>
<tr>
<td>Managing loan as per planning</td>
<td>.225</td>
</tr>
<tr>
<td>Managing loan interest and other expenses through the income</td>
<td>.204</td>
</tr>
</tbody>
</table>

**Extraction Method: Principal Component Analysis**

From the Table 2, it could be seen that four components extracted from the analysis with an Eigen value of greater than one which explained 57.755 percent of the total variance. There is one method to reduce the number of factors to something below that found by using the greater than one rule is to apply the scree plot test. In this regard the figure 1 has been shown the useful factors.
From the figure 1 it is clear that this data set lead to the conclusion that the first four components should be accepted. The rotated (varimax) loadings for the four components are presented in table 3 below.

Table 3: Total Variance Explained after Rotation – Micro credit

<table>
<thead>
<tr>
<th>Component (Dimensions of Micro Credit)</th>
<th>Eigen Value</th>
<th>Percentage of Variance Explained</th>
<th>Cumulative Percentage of Variance Explained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectations are being met</td>
<td>7.836</td>
<td>17.832</td>
<td>17.832</td>
</tr>
<tr>
<td>Regular repayment without pressure</td>
<td>2.060</td>
<td>15.206</td>
<td>33.038</td>
</tr>
<tr>
<td>Repayment installment from the income</td>
<td>1.532</td>
<td>13.983</td>
<td>47.021</td>
</tr>
<tr>
<td>Group members get loan through revolving fund</td>
<td>1.278</td>
<td>10.735</td>
<td>57.755</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis

In this regard the rotated components matrix for dimension of micro credit could be explained that the Eigen value for each factor is greater than 1.0 (7.836, 2.060, 1.532 and 1.278) which means that each factor can explain more variance than a single variable. The cumulative percentage of variance explains by four factors is 57.755 per cent. In other words, more than 57 per cent of the common variance shared by four factors can be accounted or explained by these four factors. Based on the above results, the construct validity is established.

Table 4: Rotated Component Matrix for Dimensions of Micro credit

<table>
<thead>
<tr>
<th>Name of Dimensions</th>
<th>Dimensions</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
<th>Group IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting loan through revolving fund</td>
<td>.801</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repay the loan installment from income</td>
<td>.795</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repay the loan regularly without pressure</td>
<td>.744</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing savings with the repayment</td>
<td>.661</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Usage of loan only for self-employment purpose. .577
Managing loan as per planning. .800
Managing loan interest and other expenses through the income .766
Sufficient loan is provided whenever needed .735
Sufficient loan is provided for improving business .639
Expectations are being met through micro credit .627
Self-employment return is greater than the loan interest .522
Loan is provided without delay .677
No sexual violence by loan officials .638
No distribution when providing loan .563
Loan officials have positive attitude .537
Easy to provide the collateral .536
No need to visit for getting loan .536
Interest rate is very low .725
Awareness of interest calculation .591
Attending group meetings regularly .537

Source: Field of study

**Extraction Method:** Principal Component Analysis

**Rotation Method:** Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Each of four components groups listed in table 4 is labeled according to the name of the value that loaded most highly for those measures of micro credit programme. The higher the factor loading, the more would its test reflects or measures as micro credit programme. However, the dimensions getting the highest loading and suitable for the group become the title of each group of dimensions e.g; Loan repayment – title of measures of micro credit programme group I and similar to, the statement of “No need to spend more money for getting loan”, “No idea to leave from the job” do not support in this loading because it has below 0.5 score and belongs to 0.474 and 0.373 in respectively.

**Micro credit programme dimension Group I:** Loan repayment – These dimensions are represented by six measures with factor loadings ranging from 0.801 to 0.577. They are “getting loan from revolving fund, repay the loan from job income, regular repayment, increasing savings with repayment and usage of loan for self-employment”.

**Micro credit programme dimension Group II:** Amount of loan – Five dimensions ranging from 0.800 to 0.522 belong to ‘managing the loan as per planning, managing the loan interest and other expenses through job income, sufficient loan whenever needed, sufficient loan for initiating or expanding business, fulfill the expectations and the return is greater than the loan interest”.

**Micro credit programme dimension Group III:** Credit delivery – This dimensions group comprises of “loan is provided without delay, no sexual violence by loan officials, no discrimination, positive attitude of loan officials, easy collateral and no need to visit to the institutions” with loadings from 0.677 to 0.536.

**Micro credit programme dimension Group IV:** Loan interest – Three dimensions of 0.725, 0.591 and 0.537 belongs to “rate of interest, awareness of interest calculation and regular attendance in meetings”.

<table>
<thead>
<tr>
<th>Key dimensions of Micro credit programme</th>
<th>No. of Variables</th>
<th>Factor Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro Credit Programme Group I: Repayment of Loan</td>
<td>05</td>
<td>0.182</td>
<td>2</td>
</tr>
<tr>
<td>Micro Credit Programme</td>
<td>05</td>
<td>0.199</td>
<td>1</td>
</tr>
</tbody>
</table>

**Table 5:** Ranking of Dimensions of Micro Credit according to their Importance
As depicted in Table 5, the dimensions: ‘Amount of Loan’, ‘Repayment of Loan’ ‘Credit delivery’ and ‘Loan interest’ got the ranks of first, second, third and fourth respectively and constitute the key dimensions of Micro credit programme in war affected areas in Northern Sri Lanka. Analysis presented in the above sections thus revealed that these four dimensions groups suitable for representing the measures of micro credit programme in Northern Province of Sri Lanka.

**Amount of Loan:** It is said that the micro credit loan is very small amount of money. Some time it is not sufficient to continue or keeping sustainability of their task in the society. It is ranked as first to measure the micro credit in this area with the factor score of 0.199 with the evident from table 5.

**Repayment of Loan:** The Loan is recovered as installments in a small amount of money per week or per month or quarterly. This amount should be repaid by the clients as repayment of the loan which is to be a measure of micro credit in Northern Province of Sri Lanka ranked 2nd evidenced from factor score of 0.182 in table 5. Repayment of loan is a critical factor in these areas. To be successful micro credit programme the repayment is an important factor. The reason for the failure of most of the micro credit programmes in these areas that the clients fail to repay the installment of credit.

**Credit delivery:** This is also an important factor to measure the micro credit programme as it finds out how they get loan facilities can and whether they have to wait for getting loan and so on. If there will be smooth credit delivery the credit facilities will be available. It is evident from the table 5 as a measure of micro credit programme in Northern part of Sri Lanka because it is ranked as third on the basis of factor score of 0.165.

**Interest of Loan:** The Loan interest is very important since the opinion of the micro credit interest is very high. Therefore it determines the micro credit facilities and different organizations charge various rate of interest. In other words, the micro credit facilities depend on interest rate and it is evident from table 5 as a measure of micro credit in Northern part of Sri Lanka. It has a 0.124 factor score with fourth rank.

**Conclusions**

Loan duration, amount of loan allocated per respondent, interest rate charge, number of loan cycles completed, loan adequacy and timeliness were found to influence on micro credit measures. From the above results four factors were the important variables to measure the micro credit programme. The amount of loan, repayment of loan, credit delivery and loan interest have been identified as a good measures among 22 variables which have been selected by the researcher in the Northern Sri Lanka. It has been ranked that the amount of loan got 1st rank and the interest of loan got 4th rank which reveals the important of the variable in these areas.

The results also show that women borrowers are able to enhance their livelihood asset holdings since they started benefitting from micro-credit. Age of respondents, educational background, type of main livelihood venture, number of livelihood ventures per respondent, income level and personal wealth rank are found to influence on micro credit facilities.

The micro-credit schemes provided easy access of credit by using social collateral in the form of peer group support and pressure. They encouraged the saving culture and repayment habits. A major challenge faced by the credit scheme was how to increase operation to arrive at a larger demand in an endeavor to match outreach with sustainability (Asamoah, 2011). The “3M micro enterprise model” i.e. (Micro credit, Micro market and Micro planning) is one of the best approaches for development of micro enterprises among the MFI members (Misra, 2012). Challenges should be identified when accessing micro credit. If 3M micro enterprise model is introduced the same measures could be used to measure the micro credit activities.

The government, policy makers, donors, NGOs, MFIs and other relevant organizations need to consider and address micro credit measures. The integrated approaches are important to overcome the non-institutional barriers through awareness creation, motivational program, and skill training to the women. Further, this study can be extended for further research in other regions to find out the unique measures suitable to them.

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