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Econometric Analysis of Rural Credit Utilization and Repayment Status among Rural Women: A Case of Southern Ethiopia

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Abstract
Delivering productive credit to the rural women has been a key in rural development undertaking. Providing low-cost, efficient credit services and recovering the loans granted are fundamental functions in rural finance. Low repayment performance discourages the lender to extend further credit. Investigation of credit utilization and repayment is of great importance both for policy makers and the lending institutions. The major objective of this study was to identify the major socio-economic, demographic, psychological and institutional factors that affect credit utilization and repayment performance of women members of RuSACCOs of Kindo Koysha Woreda in Wolaita Zone of SNNPR State. In the course of this study, primary data were collected from 96 sample women households and secondary data collected from respective organizations in the study area. The analysis was done using econometric analysis using Binary logit model. Binary Logit Model was used to identify the factors influencing credit utilization and repayment performance of women microcredit borrowers from rural saving and credit cooperatives. 12 continuous explanatory variables and three dummy variables were included in the logit mode. The binary logit model for credit utilization and repayment tested 15 explanatory variables. Out of which, five variables were significant and the rest were insignificant to explain the dependent variables. The loan repayment was significantly influenced by market access, transport road access, prior business engagement of women before the loan and economic motivation. Similarly, Credit utilization was significantly affected by four variables which were age of women, prior business engagement of women before the loan, transport road access and economic motivation. Thus, the findings identified need to be reckoned and suitable strategy to be introduced by RuSACCO management and policy makers to improve the loan utilization and repayment performance of women.
Keywords: RuSACCO, loan Repayment performance, Microcredit utilization, micro-finance

Introduction

Institutional credit is a very critical component of interventions directed at poverty alleviation amongst poor women in developing countries (Kyungay, 2007). Micro credit institutions in developing countries had for long time being involved in poverty reduction through credit provision particularly to women. Credit made available to economically active poor has a greater potential for job creation, household income enhancement (Satta, 1999). Financial services in general involve women's social and political development through group trainings, saving culture, etc.

Micro-credit has been recognized as the most effective tool in reducing poverty of the poorest of the poor. Many rural based micro-finance programmes have attempted to address the women specific need for micro-credit. Rural Savings and Credit Cooperatives (RuSACCOs) have been important rural institutions making credit available to the rural poor. RuSACCOs are community based financial intermediaries set up in each village in Ethiopia to cater to the needs of low-income households.

The MFIs and RuSACCOs face problems of loan default as large percentage of the rural poor have been unable to effectively service the credit borrowed from these institution (Rhyne and Otero, 1997). Rural credit arrangement is constrained by inefficient utilization among credit recipients and consequent irregular repayment. The majority of small credit programmes have been affected by serious default rates ranging from 50 percent to as high as 80 percent have been reported in small credit programmes in Africa, Asia and Middle East (Sanderatne, 1978; Kashuliza, 1986). Loan diversion and deceit are found to be the reasons behind loan default. Kashuliza (1986) argued that defaults adversely affect credit institutions solvency, liquidity and the capacity to issue loans to other clients. These situation further results in a negative impact on potential borrowers, who may find their access to credit delayed, restricted or denied because of the declining liquidity of the lender.

Defaults adversely affect credit institutions solvency, liquidity and the capacity to issue loans to other clients. These situation further results in a negative impact on potential borrowers, who may find their access to credit delayed, restricted or denied because of the declining liquidity of the lender. Thus, the utilization of the loan received is the determining factor for borrowers' income and consequent prompt repayment of the loan. Studies investigating the utilization choice of borrowers would be paramount to understand the finer aspects of the issue and propose solution.

Mongi (2005) on her study in Eastern part of Arumeru District in Tanzania noted late loan repayment was among problems faced by women groups. She noted that 50 percent of the member respondents said that the major problem was loan repayment by members which disabled the rest of the members to receive further loans.

Kasambala (2007) on his study on the determinants of credit demand in Southern Highlands of Tanzania found that 39.1 percent of the respondents reported to experience late loan repayment or loan default. In some cases women micro-entrepreneurs are subjected to loss of assets pledged/mortgaged due to loan default, aggravating their poverty situation. Reta (2011) conducted a research with the objective of analyzing and identifying factors that influence the loan repayment performance of the beneficiaries of Addis Credit and Saving Institutions (AdCSI). Age and five business types (baltinaandpetty market, kiosk and shop, services providing, weaving and tailoring and urban agriculture) were important in influencing loan repayment performance of the borrower. In addition, sex and business experience of the respondents were found to be significant determinants of loan repayment rate.

The foregoing studies are among very few studies conducted to understand the underlying reasons behind the level of repayment of loan borrowed from rural financial institutions. In the absence of such studies for the loan repayment behaviour of women farmers borrowing from RuSACCOs , the fledgling financial system of RuSACCOs in Southern Ethiopia has been a source of concern for the stakeholders including policy makers. This study examined the utilization choice and repayment status of loan among women borrowers in RuSACCOs and the characteristics of women borrowers affecting the utilization and repayment status.

Objective of the study

The objective of the study was to assess the utilization choice of microcredit and repayment performance among women in rural saving and credit cooperatives (RuSACCOs) in *Kindo Koysha Woreda*[1].

2. Methodology

2.1 Description of the Study Area

The study area, *Kindo Koysha Woreda* is located 370 km south of Addis Ababa and 290 km south west of southern nations, nationalities and people's regional town *Hawassa* and 40 km west on the way to *Jimma from* Wolaita sodo town. *Kindo Koysha Woreda* is one of the 12 districts of Wolaita zone with a geographic area of 52,623.3 km^2. The land characteristics of the *woreda* are; forest land 4957 ha, cultivated farm land 37,566 ha, pasture land 6922ha, cultivable land 338ha, and non-cultivable land 695ha.

2.1.1 Population

Kindo Koysha Woreda is one of the densely populated districts of *Wolaita* zone especially in the upper terrains. The density of population is in average 222 households per km^2 of area. There is continual land fragmentation due to increasing population pressures coupled with steep slopes of land making agricultural production difficult. As a result, majority of the young married youths are landless and continuously migrate as livelihood strategy as casual labours in the different parts of the country. The total population of the *woreda* is 131,785 of which 64,630 male and 67,154 female (CSA, 2012). Fifty percent was unproductive labour force (children: 0-14 years) of the *woreda* : Male 28,908 female 29,765 and total 58,673. The productive labour force of the *woreda,* (15-64 years years of age) : Male 27,947 female 28,775 and total 56,722 constituted 48.39% of the total population of the *woreda*. The total number of households in *Kindo Koysha Woreda* is 28,592 with average household size of 4.6 persons.

2.2 Sampling Techniques

2.2.1 Sample Size

The data for this research were obtained from women recipients of microcredit loans from rural saving and credit cooperatives in *Kindo Koysha Woreda*. Taro Yamane (1970) mathematical formula was used to determine sample size as shown below:

$$n = \frac{N}{1+ N (e)^2}$$

Where N is the total members of rural women saving and credit cooperatives in *Kindo Koysha Woreda, e (margin of error) was* 0.1(10%) while the confidence level was 95% and the precision level was 90% (that was 10% (0.1) margin error) was used. Using the total population of 2695 women members of RUSACCOs in twenty three *kebeles* and error margin of 0.1, the sample size was calculated as follows:

$$n = \frac{2695}{1+ 2695(0.1)^2} = 96$$

Hence, out of the total women RuSACCO members of 2695 in four *kebeles*, a sample size of 96 women was taken.

2.2.2 Sampling Design

This research was conducted in *Kindo Koysha* district of *Wolaita* zone, southern Ethiopia. *Kindo Koysha woreda*

[1] *Woreda*, in Ethiopian language refers to a District. Similarly, *Kabele* refers to the lowest administrative unit of the government (typically, a village)

is one of the 12 districts of *Wolaita* zone, is among the food insecure district of the zone where continuous fragmentation of land and rain-fed agriculture is the mainstay of the local economy. From the total of 31 rural saving and credit societies in the *woreda*, randomly four rural saving and credit societies were selected. Then simple random sampling technique was employed to select 96 sample participants. Data for the study was collected from 96 sample women borrowers using structured interview schedule. This was according to the list of women microcredit recipients in each saving and credit cooperative societies.

2.3 Data Type and Source

The major research method employed in this study was primary (cross sectional field survey) and secondary data which was supplemented by review of existing literature. The main reporting unit in this study was microcredit recipient woman and hence the data was collected from women members of RuSACCO and analysed. Data collection included documentary review, interviews and discussion with key informants. Interviews with individual woman were carried out using a semi-structured interview schedule, while interviews to key informants were conducted using an unstructured open ended checklist. In addition to this, documentary reviews were collected from secondary data like (books, journals, manuscripts and research and official reports).

2.4 Methods of Data Analysis

A single method of analysis may not capture issues with regard utilization of microcredit and repayment performance among women recipients. For this reason, different techniques of analysis including descriptive and inferential statistics such as Chi-square tests and t-tests as well as econometric models were employed using statistical packages for social sciences (SPSS, V.20) software for the descriptive. Moreover, data obtained through interviews were triangulated with description obtained from survey.

2.5. Working Hypotheses and Definitions of Variables

Dependent Variable:

The Dependent variables are explained as Y1 and Y2, below: - The dependent variables for the Binary logit analysis were dichotomous in nature representing observed credit utilization and repayment performance.

Y1 = Microcredit utilization: The dependent variable was a dummy variable (1 if the borrower utilized the loan for productive investment such as production and income generating activities otherwise 0, if the borrower misused the loan for unintended household consumption purposes).

Y2 = loan repayment performance It referred to the status of women borrower who paid their loan before last date of repayment, and as per the schedule every year. It is represented by 1 if the borrower repaid the loan on the due date and 0 otherwise, if the loan was not repaid on the due date.

The summary of Dependent variables analysed for the study is given in Table1.

Table.1: Summary of Independent Variables and their definition

S/No	Independent Variable code	Description of Variable	Unit of Measurement	Hypothesised sign with Y1	Hypothesised sign with Y2	Definition
1	Age	Continuous	year	+	+	Age of women recipient
2	Marital Status	Dummy	categorical	+	+	Marital status of woman is unmarried =0, married= 1, divorced =2, and widowed= 3.
3	Dependency Ratio	Continuous	Ratio	-	-	The ratio of non-working age groups to the working age (adult) group.
4	Education	Continuous	School grade	+	+	School grade completed by a women recipient.
5	Household Size	Continuous	Person	-	+	A person or group of people occupying a single dwelling
6	Market Access	Continuous	Kilometre	-	-	Proximity to near-by urban market.
7	Road Access	Continuous	Kilometre	-	-	Proximity to near-by motor vehicle transport access road.
8	Loan Interest Rate	Continuous	Percentage	-	-	Percentage of interest rate
9	Savings in RuSACCO	Continuous	Birr	+	+	Amount of money saved in an individual account.
10	Household Income	Continuous	Birr	+	+	Total income gained in a year
11	Prior Business Engagement	Dummy	Categorical	+	+	Engaged in business before loan=1 no engagement in business = 0
12	Economic Motivation	Dummy	Likert scale	+	+	Level of motivation (no= 0, low= 1, medium= 2, and high =3).
13	Perception towards RuSACCO	Dummy	Likert scale	+	+	Perception towards RuSACCO (Negative =1, neutral =2, and positive =3)
14	Loan Amount	Continuous	Birr	+/-	+/-	Amount of money in birr a woman borrowed.
15	Farm Land Size	Continuous	Hectare	+/-	+/-	Hectare of cultivable land a woman household owns.
16	Livestock owned	Continuous	Animal in TLU	+	+	Number of animals owned by women borrower household.
17	Training	Continuous	Session	+	+	Number of credit management &skill training sessions provided to women recipient.

2.6. Econometric Model Specification

The dependent variables in this case were a dummy variables or qualitative dichotomous variables which take the value of 1 if the borrower repaid the loan before due date and 0, if not repaid in due date and for credit utilization 1 if the borrower properly utilized the loan for production and/or income generating activities otherwise 0, if the borrower misused the loan for unintended household consumption purpose during the year. Explanatory variables included in the study were of both types i.e. categorical and continuous depending on the nature of the explanatory variables. Regarding the dummy dependent variables, there were three different models that one can use: the linear probability model, the logit model and the probit model. Of all models, considering the pros and cons of the models, Logit model has been adopted to this study. The logit model is specified as follows:

$$P_i = E(y = 1/X_i) = \frac{1}{1+ e^{z}}$$

Where: $Z_i = B_0 + B_1X_1 + B_2X_2 + ... + B_kX_k + U_i$

Xi = i^{th} explanatory variable
Bi = Coefficient of explanatory variables to be estimated
K = represents number of explanatory variables included in the model
If Pi is probability in favour of non- defaulter /loan repaid/ by the women (loan utilized productively), then (1-Pi) is the probability of loan defaulter / loan not repaid by the women (loan utilized for consumption purpose).

$$\frac{Pi}{1-Pi} = \frac{1+e^{z}}{1-e^{-z}} + e^{z} = e^{(B_0 + B_1 X_1 + \ldots + B_k X_k)}$$

Therefore, $\frac{Pi}{1-Pi}$ is the odds-ratio that implies the ratio of the probability that an individual would choose an alternative Pi to the probability of the borrower would not choose it (1-Pi).

Taking natural logarithms of, $\frac{Pi}{1-Pi} = e^{z}$

We have, $\ln(\frac{Pi}{1-Pi}) = Zi = B_0 + B_1X_1 + B_2X_2 + \ldots + B_kX_k + U_i$

This log-odds ratio is a linear function of the explanatory variables and we call it logit model. In this case our data was based on individual observations; we used the method of maximum likelihood function to estimate the model.

3. Findings and Discussion

3.1. Repayment Vs Credit Utilization

Rural Savings and Credit Cooperatives (RuSACCOs) provide credit for its members to invest in productive purposes, encourage farm production, and promote non-farm business enterprises in rural area. In this study, as seen from Table 2 that of the total 96 respondents, 34 (70.8 %) defaulters utilized their loans for household consumption purposes whereas, 14 (29.2 %) of defaulters utilized their loan for an intended productive investment purposes. Similarly, 42 (87.5%) non-defaulters properly used their loan for an intended productive investments and the remaining only 6 (12.5%) utilized their loans for household consumption purposes. The survey result showed that majority of non-defaulter borrowers used the loan for productive investments rather than defaulters. Similarly, the Chi-square value of (33.60***) shows there is statistically significant difference at less than 1 percent level between non-defaulters and defaulter borrowers in credit utilization.

Table2: Credit utilization vs. repayment performance

Microcredit utilization	Defaulters		Non-defaulters		Chi-square value	Total	
	N	%	N	%		N	%
Consumption purposes	34	70.8	6	12.5		40	41.7
Productive investments	14	29.2	42	87.5	33.60***	56	58.3
Total	48	100	48	100		96	100

Source: computed from data 2016 P value = 0.000 *** significant: at less than 1% level of significances

3.2 Factors affecting Credit utilization and Repayment Performance:

3.2.1 Results of Econometric model Analysis

To study factors influencing Credit utilization and Repayment Performance, data gathered from 96 sample households were subjected to logistic regression analysis. The statistical software package used for analyzing the data was SPSS V.20 for windows. The Binary logit model was selected for analyzing the factors influencing credit utilization and repayment performance of the sample households. Prior to running the Binary logit regression model, the continuous explanatory variables were checked for the existence of multi-collinearity problem.

3.2.2 Determinants of credit utilization and repayment performance

Logistic regression analysis was conducted to determine factors that contribute significantly influence to credit utilization and loan repayment. To estimate the maximum likelihood estimates of the binary logit regression model the following variables analyzed in the Binary logit model. Those are Age of women , Education of women , Household size of women , Dependency ratio , Total household income , Business skills of women farmsize owned, livestock ownerships , market access , transportable road access , loan amount, amount of saving in RuSACCO , business skill trainings , economic motivation , and perceptions towards RuSACCOs were considered as important factors may influence the credit utilization and repayment performance among members' of rural saving and credit cooperatives in the study area.

Out of these factors the loan repayment performance was influenced by only four variables .these were prior business engagements before the loan, market access, road access, and economic motivation. On the other

hand microcredit utilization is also influenced by only four variables and these variables were age of women, prior business engagement of women, road access and economic motivations were found significant. Whereas, the remaining coefficients of ten explanatory variables, namely, Education of women , Household size of women , Dependency ratio , Total annual household income , total cultivable farmland owned livestock ownerships , total loan amount , total amount of saving in RuSACCO , business skill trainings , and perceptions towards RuSACCOs were unable to explain loan repayment performance of the sample households and/or microcredit utilizations indicating that the two groups were homogeneous with regard to these variables. The results of the logit regression analysis are shown in Table 3 and Table 4:

Table 3: Logistic regression estimates of microcredit utilization for (productive investment vs consumption purposes)

Variable	B	S.E.	Wald	df	Sig.	Exp(B)
Age	**-0.132**	**0.067**	**3.835**	**1**	**0.050***	**0.876**
Education	0.541	0.464	1.362	1	0.243	1.718
Household Size	-0.075	0.424	0.031	1	0.860	0.928
Dependency Ratio	-0.560	0.402	1.942	1	0.163	0.571
Household Income	-0.001	0.001	1.050	1	0.305	0.999
Prior Business engagement	**2.038**	**0.876**	**5.406**	**1**	**.020****	**7.672**
Farm Size	-5.631	3.864	2.123	1	0.145	0.004
Livestock Size	0.622	0.747	.693	1	0.405	1.863
Market Access	-0.110	0.084	1.708	1	0.191	0.896
Road Access	**-.209**	**0.095**	**4.785**	**1**	**.029****	**0.812**
Loan Amount	-0.001	0.001	2.429	1	0.119	0.999
Savings Amount	0.003	0.002	1.927	1	0.165	1.003
TRAININGS	-0.300	0.544	0.303	1	0.582	0.741
Economic Motivation	**1.906**	**0.977**	**3.803**	**1**	**.051***	**6.724**
Perception -RuSACCO	-0.487	0.796	.375	1	0.540	0.614
Constant	2.764	5.816	4.214	1	0.040	15.858

Overall percentage correctly predicted = 88.5 **-2Log likelihood = 63.889**
Chi-square value = 66.516* ** **Sample size = 96**
Source: Model output 2016 *, **, *: significant at 10 and 5 percent probability level, respectively**

Age of women: Age of women is very important factor that influences the microcredit utilization of women and having negative coefficient which also indicates that those relatively younger women are having more chances of investing the borrowed money on intended productive activities. This is because younger women have better capability of engaging in frequent mobility requiring non-farm business activities, better adoption of new technologies, better market information and have risk taking behaviours. On the other hand when the age of women progresses they are becoming exhausted and having risk aversion behaviour and more probability of utilizing the loan for household consumption purposes. Moreover, majority of youth households are having very small and fragmented landholding nearly 0.25 hectare in the study area. This situation also forced them to engage in other alternative high risk but high return non-farm business activities to sustain their livelihoods. Hence, they are more close to the market and better skill of running small business and also observed to be more successful in their business. The model result shows that age of women

Table 4: Logistic regression estimates of loan defaulters vs. non defaulters

Variable	B	S.E.	Wald	df	Sig.	Exp(B)
Age	0.008	0.081	0.011	1	0.918	1.008
Education	2.521	15.302	0.000	1	0.995	12.442
Household Size	-0.535	0.520	1.056	1	0.304	0.586
Dependency Ratio	0.196	0.453	0.188	1	0.665	1.217
Household Income	-0.001	0.001	0.415	1	0.520	0.999
Prior Business Engagement	**3.392**	**1.350**	**6.311**	**1**	**0.012****	**29.714**
Farm Size	-4.752	5.629	0.712	1	0.399	0.009
Livestock Size	0.255	0.984	0.067	1	0.796	1.290
Market Access	**-0.207**	**0.113**	**3.365**	**1**	**0.067***	**0.813**
Road Access	**-0.262**	**0.138**	**3.636**	**1**	**0.057***	**0.769**
Loan Amount	-0.001	0.001	0.371	1	0.542	0.999
Savings Amount	0.002	0.003	0.414	1	0.520	1.002
Training	-0.499	0.699	0.509	1	0.476	0.607
Economic Motivation	**3.875**	**1.344**	**8.307**	**1**	**0.004*****	**48.159**
Perception-RuSACCO	0.917	1.133	0.655	1	0.418	2.503
Constant	-3.277	5.804	0.319	1	0.572	0.038

Overall percentage correctly predicted = 91.7 **-2Log likelihood = 39.669**
Chi-square value = 93.416* ** **Sample size = 96**
Source: Model output 2016
, **,: significant at 10, 5 and 1 percent probability level, respectively**

is influencing microcredit utilization significantly at less than 10 percent of probability level. If the other variables held constant, a unit increase in women's age reduces the probability of productive investment by 0.876 times. Therefore, this variable has an important influence on microcredit utilization and had negative relationship with the dependent variable.

Prior business engagement: Prior business engagement is also important factor influencing both microcredit utilization and repayment performance. The results of logit model revealed that prior business engagement of women have significantly influencing microcredit utilization and also loan repayment performance of women at 5 percent of probability level. This is mainly because success of entrepreneurs or enterprise developer is greatly determined by previous skills. Business skill of women improves communication skills, timely market information and also the bargaining power of women. If the other variables held constant, having prior business engagement increases productive investment by 7.672 times and also increases the loan repayment performance by 29.714 times. Similar result in table 13: revealed that majority of those women invested their loans on non-farm business activities and having previous business engagement was more successful in total savings and timely loan repayments.

Market access: Market access is an influencing factor which affects the repayment performance of women. The logit model result revealed that market access has significant influence on repayment performance at 5 percent probability level. It has also negative relationships with repayment performance. Market access indicates the proximity of a household to the largest market in the area; frequent market price information; information on market prices of local and main destinations; and information on transport routs. Accordingly, as the distance of a household increases market access of households decreases as a result the loan repayment performance decreases and those households nearer to the market centre are having more probability of repaying their loan on time. If the other variables held constant, a unit increase in the distance of women's residence to the largest market centre in the area lessens the loan repayment rate by 0.813 times.

Transportable road access: Transport road access is an influencing factor which affects both microcredit utilization and repayment performance of women. The logit model result revealed that road access has significant influence on microcredit utilization and repayment performance at 5 and 10 percent probability level respectively. It has also negative relationships with repayment performance. Road access indicates the proximity of a household to the motor vehicle transport access roads in the woreda. Accordingly, as the distance of a household increases to the transport access road the microcredit utilization and repayment performance decreases and those households nearer to the transport access roads are having more probability of repaying their loan on time and utilizing the microcredit on productive investment activities. If the other variables held constant, a unit increase in the distance of women's residence to the transport access road decreases the probability of productive investment by 0.812 times and also reduces the repayment performance by 0.769 times.

Economic motivation: Economic motivation is an influencing factor which affects both microcredit utilization and repayment performance of women. The logit model result revealed that economic motivation has significant influence on microcredit utilization and repayment performance at 10 and 1 percent probability level respectively. It has also positive relationships with microcredit utilization for productive investments and loan repayment performance. Economic motivation indicates the intension and commitment of women for future improvements. Accordingly, as the economic motivation of women increases the probability of microcredit utilization for productive investments and loan repayment performance increases. If the other variables held constant, high economic motivation of women increases the probability of productive investment by 6.72 times and also increases the probability of loan repayment rate by 48.15 times.

Conclusion and Recommendations

Concerning the econometric result, fifteen explanatory variables had hypothesized to explain the factors that affect credit utilization and repayment performance of women. These variables were demographic type, socio-economic, psychological and institutional in nature. The logit regression model showed that totally five variables was significant to affect borrowers' credit utilization and repayment performance together. Among which three variables were significant to affect borrowers' credit utilization and repayment performance mutually and the other two variables significantly affects microcredit utilization and loan repayment performance of women borrowers separately. From these, four variables which were significant to affect loan repayment performance of borrowers were; prior business engagement of women, road access, market accesses and economic motivations of women. Similarly, four variables also affecting credit utilizations were; age of women, prior business engagement, road access and economic motivations. Therefore, except economic motivation and prior business engagement variables, the remaining three significant explanatory variables were affecting microcredit utilization and the loan repayment performance borrowers negatively.

Age of women found to be significant at less than 5%, have negative and strong impact on the microcredit utilization of sample households. The justification for this could be borrowers who are getting older are exhausted and not capably of walking long distance to market to engage in business activities. However, younger women are physically capable and more mobile and have better market information and likely to be more successful in their business.

The other significant variable is road access. This variable had significant effect at less than 5% for microcredit utilization and 10% for repayment performance and negatively related to both microcredit utilization and loan repayment performance, The main reason for this could be road is very important factor even for mobility of people from place to place. Due to undulating topography of the *woreda* road access is very poor as compared to other *woredas* in the zone. Women with difficulty of road access were not initiated to engage in new business activities as their alternative livelihood strategy and unable to allocate their loans in productive investments and finally defaulted.

Prior business engagement of women before the loan also found to be significant variable at less than 5% in the logit regression model for both credit utilization and repayment performance. This variable was positively related to both microcredit utilization and loan repayment performance of women respondents. Prior business engagement was also an indication for having better market information, information on destination prices of items or goods, knowledge of the demand and transport direction of goods or items. For this reason, borrowers who have previous business engagements were more successful in credit utilization and repayment performance.

The other significant variable was market access. This variable had significant effect at less than 10% for repayment performance and negatively related to the loan repayment performance. The reason for this could be market access is important factor which determines the success of business and profitability of business. Due to undulating topography of the *woreda* market access is very poor as compared to other *woredas* in the zone. Market access affects the cost of transportation, time and energy required to access the market. Women with difficulty of market access were not initiated to engage in new business activities as their alternative livelihood strategy and invest the money productively.

Economic motivation is the other significant variable for both microcredit utilization and repayment performance of women at less than 10 percent and 1 percent level respectively. Economic motivation is an indication for building economic assets soon, having business plan and increase in savings and loan amount frequently, expending the existing business activity and involving in enterprises even if there is high risk. Therefore, higher economic motivation indicated higher commitment of women to improve the future.

In general, the model output showed that the most influential explanatory factors of credit utilization and loan repayment performance were age of women, prior business engagement of women, road and market access and economic motivation of women. Therefore, those influential factors have to be given great emphasis by governmental concerned bodies, non-governmental organizations, food security office and private sectors (cooperatives).

Recommendation

Based on the findings of the study the following were recommended:

Age of women has great impact on success of individual borrowers and also for sustainability of RuSACCOs societies. Younger and medium aged women are more preferred and eligible to microfinance access and proper utilizations and timely repayments of the credit loans to the cooperatives. Providing credit loans to younger and active women ensures the sustainability and financial liquidity of the RuSACCOs. Majority of young aged women were engaged in high return but high risk non-farm businesses activities as their main livelihood strategy and succeeded in their business, improved their household incomes, improved households consumption patterns and improved their overall livelihoods in general. Therefore, the rural cooperative societies, non-governmental supporting agencies and cooperative offices with other concerned bodies should take in to consideration the age of borrower women before granting the microcredit loans.

Prior business engagement of women before the loan is also another important factor which determines the risk taking behaviour and success of businesses by women. It is also an important ingredient for successful micro-entrepreneurs engaging in similar business that they were having good skills before the loan. Therefore, the business skill should be promoted by rendering different skill development operation and entrepreneurship trainings and experience sharing so that they can be able to use the loan properly on productive activities and repay the loan on time.

Rural road access is also an important factor proper utilization of the loans success in their business activities. It has negative relationship with credit utilization and repayment performances. When the distance of women get farther from the transport access road means the remoteness of the residence and lack of business information on timely market prices at the local market, the price at bigger markets, lack of information of transport routs and the price at final destination. Moreover, due to undulating steep topography of the *woreda* most of the highland *kebeles* are out of transport access roads. Therefore, the *woreda, zonal* and regional governments and other relevant bodies should give due attention to improve rural urban road networks in the *woreda* to improve social service facilities. Similarly, the RuSACCO societies, cooperative desks and other associated bodies need to consider the road access of recipients to issue the amount of credit loans.

Market access indicated the relative proximity of borrower residences to the nearest and largest market in the area. Distance to market centres had a direct negative impact on loan repayment. When a household is farthest to the market access there would be higher transport expenses and the time consumed to reach the market centres. Lacks of market access do not motivate the new entrepreneurs to enter in to business activities. Therefore, policy makers should take in to consideration the proper dissemination of market information to rural households, fair product pricing and excluding the middle-men which exploits the rural community.

Economic motivation is also an important psychological factor that determines the performance of women in RuSACCOs. Economic motivation is an important ingredient that influences the commitment of women to create the better future. Those women with higher economic motivations invest the credits on productive activities and save reasonable amount of money without interruptions and repay their loans timely. Economic motivation is an important factor which enhances the risk taking behaviour of women and is base ground for new entrepreneurs. Therefore, the RuSACCO cooperative societies, non-governmental supporting agencies and food cooperative desks with other concerned bodies should take in to consideration the economic motivation of borrower women before issuing the microcredit loans.

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