Developing Country Studies
ISSN 2224-607X (Paper) ISSN 2225-0565 (Online)
Vol.3, No.3, 2013

Social Capital Dimensions and other Determinants Influencing Household Participation in Micro-credit Groups in Uasin Gishu County, Kenya

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Abstract

This paper examined the social capital dimensions and other determinants influencing household participation and level of participation in micro-credit groups in Uasin Gishu County, Kenya specifically Moiben division. In the study area, the microfinance institutions and other lending organizations have extended credit facilities to households through individual and group lending schemes in their bid to increase household access to credit. However, even with the recent proliferation of micro-credit groups a considerable proportion of the poor households in the area have not joined micro-credit groups. A structured questionnaire was used to gather information from 174 households from the division, using the multistage sampling technique. Heckman selection model was applied to identify factors that influenced households to join and the level of participation in the micro-credit group**.** The results indicate that age, gender, education farm size, household size, farm income and distance to the nearest financial institution influenced household decision to join the micro-credit groups. On the other hand age, farm size, total income, heterogeneity index, density of membership, years of experience in group borrowing and decision making index significantly influenced the level of participation. Based on the findings policy implications were drawn for improving household access to credit in the study areas.

Key words: Access to credit, group lending, social capital and Heckman selection model

Introduction

Access to credit is known to accelerate household and national economic development (Pederso, 2003; FAO, 2006). In Kenya, access to credit particularly remains a mirage to a majority of the growing population where only 39.6% of Kenya's adult population has access to credit products (FSD, 2009). Combined with those that have access to MFIs and SACCOs, more than half of the adult population is excluded from formal bank credit. This lack of access to credit by poor rural households has negative consequences for agricultural and non-agricultural productivity, income generation and household welfare (Diagne and Zeller, 2001).

One of the main reasons for the lack of credit is the fact that traditional commercial banks typically have no interest in lending to poor rural households due to their lack of viable collateral and the high transaction costs associated with the small loans that suit them. However, group lending approach by microfinance institutions (MFIs) has been implemented as an alternative to formal bank credits. Group lending approach is aimed at providing credit to individual members of a micro-credit group with greater value attached on organized groups which depicts the importance of social capital. The approach makes use of group guarantee mechanism making loans accessible to the poor households (Mejeha and Ifenkwe, 2007). The success of this approach in accessing credit relies heavily on existence of social capital within a borrowing group Grootaert *et al.* (1999). Within these groups borrowers utilize their social capital to overcome problems such as adverse selection, moral hazard and contract enforcement associated with asymmetric information in credit markets (Gomez and Santor, 2001). In this respect social capital is defined according to Woolcock *et al.*, 2000 as the norms and networks that enable people to act collectively.

Putnam (2000) and Grootaert *et al.*, 1999 have demonstrated that social capital has quantifiable effects on different aspects of human beings using different proxies. Accordingly, Narayan and Pritchett (1999) developed a number of indicators related to village associations, activities, norms and trust. These indicators include density of membership, group heterogeneity, member cash contribution, meeting attendance and participation in group decision making. Existence of these dimensions bind groups of borrowers together as a form of social collateral and deviation from the norms guiding the group may lead to sanctions or exclusion (Mwangi and Shem, 2012). Consequently, groups substitute the traditional collateral and poor legal frameworks required in enforcing loan contracts, both of which keep the poor households away from accessing formal credit.

Joining micro-credit groups presents an option to increase access to credit exhibited by the proliferation of micro-credit groups all over the County. Even as group lending claims to improve poor household access to credit and lower transaction costs by providing incentives for peers to screen, monitor and enforce each other's loans, the rate of household joining micro-credit groups is still low in Uasin Gishu County.

2. Methodology

2.1 Data Source and Sampling Technique

The study was carried out in Moiben Division, Uasin Gishu County. The County is one of the 47 counties of Kenya. It extends between longitude 34° 50′ and 35° 37′ East and 0° 03′ and 0° 55′ North with a total area of 3327.8 km^2. The main economic activities in the County include both large and small scale maize and wheat farming, passion fruit growing, dairy farming, sports (Athletics), Manufacturing and agro processing. Financial services in the County include nineteen (19) Commercial banks and eleven (11) Micro-Finance Institutions.

In the first stage of the sampling procedure, a purposive sample of Moiben Division was made, while in the second stage a stratified random sampling of group borrowers and individual borrowers were selected. Finally, in stage three, 4 members from each of the micro-credit group were randomly selected, making a total of 116 respondents (4 x 29) and a random selection of 58 individual borrowers to form the control group. The list of groups and members was obtained from the local branches of financial institutions operating group lending scheme in the study area. A structured questionnaire was used to collect data from the sampled respondents in July/August, 2012.

2.2 Analytical Methods

Quantitative data was analyzed using statistical test, t-test and chi square to investigate the relative difference between group borrowers and individual borrowers. In addition, Heckman selection model was used to determine the factors hypothesized to influence household to join a micro-credit group and the level of participation in the group.

In this study the decision to join a micro-credit group and the level of participation may not necessarily be jointly determined. In such a scenario there is high likelihood that household will only increase the level of participation if there is a strong cohesion within micro-credit group enhanced by social capital dimensions. Additionally, the observed number of borrowings is nonrandom and conditional on the decision to join a micro-credit group. This introduces sample selection problem. To correct selection bias problem Heckman, 1979 developed Heckman selection model. This model is therefore suitable in determining the factors that influence household participation and level of participation in micro-credit group in the study area.

The Heckman selection model is represented as shown below:

Step 1: Probit model for participation (selection equation). This step estimates the probability of group participation as shown in the equation (1) below.

$$P_i = \delta Z_i + \varepsilon_i, \quad E\left(\varepsilon_i / Z\right) = 0 \quad \text{..... (1)}$$

Where, P_i is a dummy for participation in micro-credit group while Z_i is a vector of variables that affect participation decision.

Step 2: Outcome equation explaining the level participation.

$$Y_i = \beta X_i + \mu_i, \quad E\left(\mu_i / X\right) = 0 \quad \text{..... (2)}$$

Where; Y_i indicates the level of participation measured by the number of borrowings, X_i is a vector of variables

that explain the levels of participation, ε_i and μ_i are the error terms. The model assumes that Z and X are observable exogenous variables and X is a subset of Z. If the correlation between ε_i and μ_i is not zero it brings about the selection bias problem. After estimating the selection equation a non selection bias is computed using equation (3) below.

$$E\left(\varepsilon_i/_{P_i}, Z_i\right) \quad (3)$$

This is called Inverse Mills Ratio (IMR) $\lambda(\delta Z_i)$ when P_i=1. Then the new lambda is used in the selection equation (2) as an explanatory variable. The new equation for the second stage regression is therefore:

$$E(Y_i = Z_i, P_i = 1) = \beta X_i\ \rho\lambda(\delta Z_i) \quad (4)$$

Equation (4) gives the expected number of loans Y_i given vectors of observable factors Z_i and given that the household has already made the decision to participate in micro-credit group. This can be explained by vector of observable characteristics $X_i$and the Inverse Mills Ratio evaluated as, $\lambda(\delta Z_i)$.

If P_i=0 then there is no evidence of the selection bias and the regression reverts to OLS. But if $P_i \neq 0$ then there were omitted variables in the initial model correlated with X_i which is corrected by including IMR in the second regression.

The selection equation for the Heckman selection model determining drivers for household micro-credit group participation is reduced to give Equation 5:

$$BLNGTOGRP=\beta_0+\beta_1 AGE+\beta_2 GENDER+\beta_3 EDUC+\beta_4 HHSIZE+\beta_5 FMSIZE+\beta_6 YRSDVSN+$$
$$\beta_7 AWARENESS+\beta_8 INTRSTRATE+\beta_9 LANDTNR+\beta_{10} DSTNC+\beta_{11} LnFRMINCM+\varepsilon \quad (5)$$

While the outcome equation estimating the level of micro-credit participation is reduced to give Equation 6:

$$NUBORRWNGS=\beta_0+\beta_1 AGE+\beta_2 GENDER+\beta_3 EDUC+\beta_4 HHSIZE+\beta_5 FMSIZE+\beta_6 MAINOCCP+\beta_7 GRPSIZE+\beta_8$$
$$MTNGATNDCINDX+\beta_9 HETEROINDX+\beta_{10} LnCSHCNTBN+\beta_{11} DECSNINDX+\beta_{12} DSTYMBSHP+\varepsilon \quad (6)$$

2.2.1 Social Capital Dimensions

As indicated above the social capital dimensions used in the analysis include: density of membership, heterogeneity index, meeting attendance index, cash contribution and decision making index. The measurement of each is as described by Grootaert *et al.* (1999) and used by, (Lawaal *et al.*, 2009, Okunmadewa *et al.*, 2007 and Yusuf, 2008).

Description of Variables used in Heckman selection model

BLNGTOGRP = Membership in micro-credit group (Dummy; 1=group, 0=Individual)
AGE = Age of borrower (Years)
GENDER = Sex of the borrower (Dummy; 1=Male, 0=Female)
EDUC = Years of formal education (Years)
HHSIZE = Household members (Number)
FMSIZE = Total household farm size (Hectares)
MAINOCCP = Household main occupation (Dummy; 1= Farming, 0= Otherwise)
LANDTNR = Land tenure system (Dummy; 1=with title, 0=Otherwise)
AWARENESS = Awareness of group borrowing (Dummy; 1=Yes, 0= No)
INTRSTRATE = Loan interest rate (Percentage)
GRPSIZE = Members in the micro-credit group (Number)
MTNGATNDCINDX = Index derived from the number of meeting per month
HETEROINDX = Index derived from age, education level, level of wealth and gender variables
LnCSHCNTBN = Amount contributed per month (Kenya shillings)
DECSNINDX = Index derived from level of participation in group decision making Ranging from *Very active* to *not participating*
DSTYMBSHP = Groups one is a member (Number)
EXPERNCE = Experience in group borrowing (Years)
LnTTLINCM = Total household income (Kenya shillings)
DSTNC = Distance to the nearest financial institution (Kilometers)
LnFRMINCM = Farm income (Kenya shillings)

YRSDVSN = Years of residence in Moiben Division

3. Results and Discussion

3.1 Socio-economic Characteristics of Group and Individual Borrowers

Tables 1, 2 and 3 present socio-economic and institutional characteristics of group borrowers and individual borrowers in the study area.

The results in table 1 revealed a significant mean difference at less than 5% significance level between the group borrowers and individual borrowers in terms of, age, farm size, years of education, farm income, off-income, total income, loan size, distance to the nearest financial institutions and interest rate. However, household size, years of residence in the division were not significantly different between group and individual borrowers in the study area.

The results on table 2 show the dummy socio-economic variables which include gender and land tenure system in Moiben division. Chi square results on gender and land tenure system indicated that there existed a significant difference between group borrowers and their counterparts' individual borrowers at 1% and 5% respectively.

The summary statistics for five dimensions of social capital dimensions are presented in table 3. The results indicate that on average group members attended group scheduled meetings per month with a 72.70% index of meeting attendance. The micro-credit groups were heterogeneous in terms of age, gender, education level, occupation and economic status with a mean of 60.17% index of heterogeneity. In terms of their monthly contribution all the groups contributed some amount of money to the group which is saved and used to run group activities as required by the microfinance institution. This amount can later be used in case of group inability to repay the borrowed loan. The least amount that a group contributed monthly was Kshs. 400 while the maximum was Kshs.2500. On average each member contributed Kshs.1282.80 monthly to the group. Decision making index indicate member participation in decision making is an average of 75.22% index. Lastly, in the density of membership variable, results showed that households have membership in at least one (1) micro-credit group and a maximum of three (3) groups. On average households have membership in at least two (2) micro-credit groups.

3.2 Factors Influencing Households to Join Micro-credit Groups

To determine the explanatory variables that influence households to join a micro-credit group in Uasin Gishu County specifically Moiben Division Heckman selection model was estimated. The results of the analysis are presented in Table 4.

A total of 12 explanatory variables were considered in the econometric model. The negative signs of marginal effects reduce probability of a household joining group borrowing loan scheme while the positive signs increase the probability of joining in the loaning schemes. The coefficient of IMR was also significant and positive at 0.048.

It found that age (AGE) significantly and negatively influenced household to join a micro-credit group borrowing with marginal effect of 0.031. This indicates that an increase in age of the borrower by one year reduced the probability of joining micro-credit group by 3.1%. Implying that other things remaining constant as the household age increases they accumulate collateral that enable one seek for individual loan. Coupled with this, the chances of older people being considered for credit are low due to the low probability of success and high risk of default. This is consistent with the results from Nguyen (2007) and Ayamga *et al*. (2006).

The literature on effect of gender on joining micro-credit groups is ambiguous. This study revealed gender of the borrower (GENDER) was significant and negatively influenced household to join micro-credit group with a marginal effect of 0.281. This implies that the probability of females joining micro-credit group is 28.1% higher than men. Since female household in most African contexts do not have/own the collaterals required to borrow from formal financial institutions such as title deeds, they are forced to join borrowing groups. It could also be due to the structure of financial institutions, which provide credit to women only.

Household size (HHSIZE) significantly and positively influenced household decision to join micro-credit group with marginal effect of 0.077. This implies that a unit increase in household size increases probability of joining micro-credit group by 7.7%. This implies that individuals with large household size were likely to join micro-

credit groups since they have more family burden to contain with, in terms of social and economic services and therefore need support to meet their family daily needs. Simtowe and Zeller (2006) concur with this finding.

Education (EDUC) was negatively significant in influencing the decision to join micro-credit groups with a marginal effect of 0.087. This demonstrates that an additional year of education decreases the probability of households joining a micro-credit group by 8.7%. The underlying assumption is that more years of formal education help households to find paid jobs hence they can access formal loans which do not need one to join a micro-credit group. This result concurs with those of Aqsa *et al.* (2005) and Nguyen (2007).

Size of farm land (FMSIZE) was significant and negatively influenced household decision to join micro-credit group with a marginal effect of 0.229. Implying that one hectare increase in household size of farm land reduces the probability of joining micro-credit group by 22.9%. This is because large farm sizes can be used as collateral to access formal credit from commercial banks. Those with smaller parcels of land therefore find it prudent to join credit borrowing groups in order to access credit. Asante *et al.* (2010) and Davis *et al.* (2010) found similar results.

Farm income (LnFRMINCM) was found to be positively significant with a marginal effect of 0.033. This implies that an increase in farm income by one Kenyan shilling increases the probability of joining borrowing groups by 3.3%. Joining groups comes with some financial commitments in the form of payment of dues. This contradicts the findings from Kundu and Mitra (2006) who argued that increase in farm income reflects capacity to finance their own spending.

Distance to the nearest financial institution from the borrowing household dwelling place (DSTNC) was significant and positively influenced individuals decision to join micro-credit group with a marginal effect of 0.018. An increase in distance to the nearest financial institution by one kilometer increases the probability of an individual joining micro-credit group by 1.8%. This is because long distances increase the travelling expenses in seeking for loans. Households are therefore better off joining credit groups since in loan officers visit the groups at their meeting places cutting down on travelling expenses. This is consistent with the results of Doan *et al.* (2010)

3.3 Factors Affecting the Level of Micro-credit Group Participation

Table 5 shows Heckman outcome equation results. Both household characteristics and social capital dimensions significantly affected level of participation in micro-credit groups (The level of participation was measured by the number of borrowing a household had made since the group inception).

Age of the borrower (AGE) was significant at 5% level and positively affected the household level of micro-credit group participation measured by number of borrowings within the credit group. This implies that *ceteris paribus* as the age of the group borrower's increase they gain more experience and expand in their business or farming activity. To finance their expanding activities the number of borrowings need to simultaneously increase since MFI loans have limits. This result agrees with those of Swain (2001).

Size of farm land (FMSIZE) was found to be negatively significant at 10% level in explaining the level of participation in micro-credit groups. A unit increase in the farm size reduces the number of borrowings; with small farm size the household will be forced to borrow more in order to meet their basic needs both food and other needs. This can be done by increasing the rounds of borrowing rather than increasing the size of loan which is rationed in this case. This corroborates with Wanyama *et al.* (2006).

Total household income (LnTTLINCM) given by the (sum of farm and off farm income) was significant at 1% and positively influenced household number of borrowings. An increase in total household income increases the number of borrowings. As the total household income increases the household gains confidence to increase the number of borrowings as they are assured of repaying it. The finding is consistent with the findings of Benito and Mumtaz (2006).

Experience in group borrowing (EXPERNCE) measured by the number of years one has been participating in the micro-credit group was significant at 1% level with a positive coefficient. This implies that other things remaining constant an increase in the years of experience in the micro-credit group increases the number of borrowings. This can be attributed to the fact that with increase in years of being a micro-credit group member

the member learns more about the group members, group borrowing mechanics and develops trust among the group members.

Heterogeneity index (HETEROINDX) negative and significant at 5% level in influencing the household level of micro-credit group participation. This means that a unit increase in group heterogeneity index (by 20 points) reduces the number of borrowings. This implies that homogenous groups better understand themselves relative to heterogeneous groups since higher level of heterogeneity attracts conflict between members of the group (Yusuf, 2008).

Decision making index (DECSNINDX) was positive and significantly affected the number of borrowings made by a group member at 5% level. A unit increase in the level of decision making index increases the number of borrowings. This supports the findings of Tabi (2009).

Density of membership (DSTYMBSHP) was found to be significant at 1% level and negatively affected the number of borrowings made by the household. This means that an additional membership in another micro-credit group leads to a reduction in the number of borrowings. Concurring with findings by Okunmadewa *et al.*, 2007 members will commit more time and resources to increased number of groups affecting their productivity which may be lead sanction due to lack of adherence to the required regulations.

4. Conclusion and Policy Implication

The study found that households within the study area sourced their credit from both group and individual modes of borrowing. Heckman selection model indicated that age, gender, education and farm size significantly affect household decision to join micro-credit groups negatively. On the other hand, household size, farm income and distance to the nearest financial institution were significant and positively influenced household decision to join the micro-credit groups. On the level of micro-credit group participation the results revealed that farm size, heterogeneity index and density of membership significantly affected household number of borrowings negatively whereas age, total income, years of experience in group borrowing decision making index significantly influenced the level of participation positively.

Based on these findings, the study recommends that the government, donors and other stakeholders should embark on campaigns to sensitize the public on the importance of forming micro-credit groups to improve credit access. These institutions are also obliged to provide training to households on how and when to establish micro-credit groups in order to take advantage of social capital existing within well organized and managed groups. Lastly, the government should improve road and market infrastructure in the rural areas to attract private investors and financial institutions, this will increase household access to credit.

5. Reference

Aqsa, B., Syeda, S. and Amara, H. (2005). Determination of Credit Programme Participation and Socioeconomic Characteristics of Beneficiaries: Evidence from Sargodha.

Asante, O., Afari–Sefa, V. and Sarpong, D. (2010). Determinants of Small-scale Farmers' Decision to Join Farmer Based Organizations in Ghana. *African Journal of Agricultural Research*, 6(10): 2273-2279. Available online at http://www.academicjournals.org/AJAR

Ayamaga, M., Sarpong, D. and Brempong. S. (2006). Factors Influencing the Decision to Participate in Micro-credit Programmes: An Illustration for Northern Ghana. *Ghana Journal of Development Studies*, 3(2): 57-65.

Benito, A. and Mumtaz, H. (2006). Consumption excess sensitivity, liquidity constraints and the collateral role of housing, Bank of England working papers 306, Bank of England.

Davis, K., Nkonya, E., Kato, E., Mekonnen, A., Odendo, M., Miiro, R. and Nkuba, J. (2010). Impact of Farmer Field Schools on Agricultural Productivity and Poverty in Uganda IFPRI Discussion Paper 00992 June 2010.

Diagne, A. and Zeller, M. (2001). Access to Credit and its Impact on Welfare in Malawi. Research report 116. International Food Policy Research Institute, Washington, D. C. 1-153

Doan, T., Gibson, J. and Holmes, M. (2010). What Determines Credit Participation and Credit Constraints of the Poor in Peri-urban areas, Vietnam? Munich Personal RePEc Archive (MPRA). MPRA Paper No. 27509. Available Online at http://mpra.ub.uni-muenchen.de/27509/

FAO. (2006). Marketing and credit.

Financial Sector Deepening (FSD) and Central Bank of Kenya. (2009). FinAccess National Survey 2009.

Gomez, R. and Santor, E. (2001). Membership has its Privileges: The Effect of Social Capital and Neighbourhood Characteristics on the Earnings of Microfinance Borrowers. *Canadian Journal of Economics*, 34 (4): 943-966.

Grootaert, C., Oh, G. and Swamy, A. (1999). The Local Level Institutions Study: Social Capital and Development Outcomes in Burkina Faso. Local Level Institutions Working Paper No. 7. The World Bank Social Development Family Environmentally and Socially Sustainable Development Network. Washington, DC: World Bank.

Heckman, J. (1979). Sample Selection Bias as a Specification Error. Econometrica 47: 153–161.

Kundu. A. and Mitra. S. (2006). Determinants Influencing a Rural Household's Preference to Join Individual Liability or Joint Liability Micro Credit Contract Operated by Primary Agricultural Credit Society. Department of Economics, Jadavpur University, Kolkata, West Bengal, India.

Lawal, O., Omonona, T., Ajani, Y. and Oni, A. (2009). Effects of Social Capital on Credit Access among Cocoa Farming Households in Osun State, Nigeria. *Agriculture Journal*, 4(4): 184-191.

Mejeha, O. and Ifenkwe, E. (2007). Density and Microfinance Service Coverage of Rural Banks in Nigeria. *International Journal of Agriculture and Rural Development*, 10(2): 1-6.

Mwangi, I. and Shem, O. (2012). Social Capital and Access to Credit in Kenya. *American Journal of Social and Management Sciences*, 3(1): 8-16.

Narayan, D. and Pritchett, L. (1999). Cents and Sociability: Household Income and Social Capital in Rural Tanzania. *Economic Development and Cultural Change*, 47(4): 871-897.

Nguyen, C. (2007). Determinants of credit participation and its impact on household consumption: Evidence from rural Vietnam. Paper presented at the 3rd Leicester PhD Conference on Economics, England.

Okunmadewa, Y., Yusuf, A. and Omonona, T. (2007). Effects of Social Capital on Rural Poverty in Nigeria. *Pakistan Journal of Social Science*, 4: 331–339.

Pederso, G. (2003). Rural Finance Institutions, Markets and Policies in African. Pre-IAAE Conference on African Agricultural Economics, Bloemfontein, South Africa.

Putnam, R. (1995). Bowling Alone: America's Declining Social Capital. *Journal of Democracy* 6(1): 65-78.

Simtowe, F. and Zeller, M. (2006). Determinants of Moral Hazard in Microfinance: Empirical Evidence from Joint Liability Lending Programs in Malawi, MRPA Paper No.461.

Swain, R. (2001). Demand, segmentation and rationing in the rural credit markets of Puri. Dissertation. Department of Economics, Uppsala University.

Tabi, J. (2009). Does Social Capital Determine Poverty? Evidence from Cameroon Household Survey. Prepared for Presentation at the GLOBELICS (Global Network for Economics of Learning, Innovation, and Competence Building Systems) 2009 Conference: UNU-MERIT (Maastricht, the Netherlands).

Wanyama, M., Mose, O., Rono, C., Mutoko, M. and Chesoro, J. (2006). Socio Economic Factors Influencing Rural Households to Access Credit for Agricultural Purposes: A Case of Trans Nzoia District, Kenya. KARI. Kitale.

Woolcock, M. And Narayan, D. (2000). Social Capital: Implications for Development Theory, Research and Policy. *The World Bank Research Observer*, 15: 225-249.

Yusuf, A. (2008). Social Capital and Household Welfare in Kwara State, Nigeria. *Journal of Human Ecology*, 23(3): 219-229.

Zeller, M., Sharma, M., Ahmed, A. and Rashid, S. (2002). Group-based Financial Institutions for the Rural Poor in Bangladesh: An Institutional and Household Level Analysis. Research Report No. 120. Washington, D.C. International Food Policy Research Institute.

Table 1: Household Characteristics by Type of Borrower (Continuous Variables)

	Individual=58		**Group=116**		**Pooled=174**		
Variable	**Mean**	**Std.dev**	**Mean**	**Std.dev**	**Mean**	**Std.dev**	**T-test**
Age (Years)	44.69	7.54	39.52	4.89	41.24	6.37	5.451***
Household size	5.64	1.92	5.59	2.00	5.61	1.97	0.136
Farm size (Ha)	4.29	2.48	2.46	1.11	3.07	1.89	6.730***
Education (Years)	12.42	2.89	10.17	3.19	11.02	3.31	5.126***
Years of residence	19.37	10.90	20.14	9.89	20.08	10.21	-0.105
Farm Income (KES)	149482.80	116614.80	55301.72	51954.36	86695.40	84284.60	5.697***
Off-farm income (KES)	280862.10	214093.60	80689.66	76742.74	147413.80	145418.17	8.753***
Total Income (KES)	430344.80	233057.20	135991.40	104678.00	234109.20	211057.60	11.501***
Loan Size (KES)	229137.90	118488.80	61250	28059.53	117212.60	106999.90	14.507***
Dst. to financial inst. (KM)	12.82	7.58	20.44	8.69	17.90	9.06	-5.68***
Interest rate (%)	19.89	2.90	22.19	3.32	20.66	3.36	4.487***

***, **, * denote significance at 1%, 5% and 10% respectively

Table 2: Household Characteristics by Type of Borrower (Dummy variables)

		Individual=58		Group=116		
Dummy variables		Frequency	Percent	Frequency	Percent	Chi2
Gender	Male	41	70.69	42	36.21	
	Female	17	29.31	74	63.79	18.43***
Land Tenure	With title deed	46	79.31	74	63.79	
	Without	12	20.69	42	36.21	4.350**

***, **, * denote significance at 1%, 5% and 10% respectively

Table 3: Summary Statistics of the Social Capital Dimensions

Social Capital Dimensions	**N**	**Min**	**Max**	**Mean**	**Standard deviation**
Meeting attendance Index	116	0	100	72.70	29.11
Heterogeneity index	116	0	100	60.17	27.47
Monthly Cash contribution	116	400	2500	1282.8	408.45
Decision making index	116	0	100	75.22	26.47
Density of membership	116	1	3	1.88	0.72

Table 4: Heckman selection equation results on the determinants of household participation in micro-credit groups in Uasin Gishu County, Kenya

Variable	Marginal effect	Z	P>|z|	X
AGE	-0.031	-2.61	0.009***	41.241
GENDER (*)	-0.281	-2.63	0.009***	0.477
HHSIZE	0.077	2.37	0.018**	5.609
EDUC	-0.087	-3.74	0.000***	11.023
LANDTNR (*)	-0.142	-1.54	0.125	0.689
FMSIZE	-0.229	-3.31	0.001***	3.066
MAINOCCP (*)	0.033	0.29	0.774	0.540
LnFRMINCM	0.033	2.29	0.022**	9.245
AWARENESS	0.114	1.09	0.275	0.644
YRSDVSN	0.000	0.04	0.968	20.081
INTRSTRATE	-0.051	-3.65	0.347	20.655
DSTNC	0.018	2.99	0.003***	17.901
_cons	12.110	4.40	0.000	
Mills lambda	0.538	-1.98	0.048**	
Rho	-0.703			
Sigma	0.765			
Number of obs	174	Wald chi2(20)	151.55	
Censored obs	58	Prob>chi2	0.000	
Uncensored obs	116	Pseudo R2	0.652	

(*) is for discrete change of dummy variable from 0 to 1

***, **, * denote significance at 1%, 5% and 10% respectively

Table 5: Heckman outcome equation results on the determinants of level of participation in micro-credit groups in Uasin Gishu County, Kenya

Variable	Coef.	Std. Err.	Z	P>|z|
AGE	0.047	0.020	2.37	0.018**
GENDER	-0.241	0.034	-1.52	0.167
HHSIZE	0.023	0.045	0.50	0.615
EDUC	-0.005	0.026	-0.18	0.854
LANDTNR	-0.215	0.159	-1.35	0.177
FMSIZE	-0.134	0.072	-1.87	0.062*
LnTTLINCM	0.694	0.147	4.72	0.000***
GRPSIZE	-0.583	0.072	-3.67	0.247
LnLNSIZE	-0.242	0.184	-1.32	0.188
INTRSTRATE	0.022	0.026	0.84	0.399
EXPERNCE	0.310	0.077	4.04	0.000***
Social Capital Dimensions				
MTNGATNDCINDX	0.003	0.003	1.16	0.245
HETEROINDX	-0.007	0.003	-2.49	0.013**
DECSNMKNGINDX	0.007	0.003	2.32	0.020**
LnCASHCNTRBN	-0.091	0.233	-0.39	0.695
DSTYMBRSHP	-0.375	0.103	-3.64	0.000***
_cons	-4.248	2.885	-1.47	0.141

***, **, * denote significance at 1%, 5% and 10% respectively

Acknowledgement

We would like to acknowledge with special appreciation the African Economic Research Consortium (AERC) for fully funding of the study. Special thanks go to staff members of Collaborative Masters in Agricultural and Applied Economics (CMAAE) and Egerton University, Department of Agricultural Economics and Agribusiness Management for their timely facilitation of the study.

To all we say thank you!