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RESEARCH ARTICLE

IMPACT OF MICROFINANCE ON LIVELIHOOD OF SMALL HOLDER FARMERS IN HADIYA ZONE, SOUTHERN ETHIOPIA

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ABSTRACT

Microfinance is a fundamental tool for poverty reduction by providing financial services to low-income individuals who are devoid of access to formal financial services. Microfinance institutions started operations in Ethiopia following Proclamation No. 40/96, and currently, there are 30 licensed MFIs and 448 branches with active clients of 2.3 million. Despite their outstanding contributions, however, their ability to improve livelihood is still in question. Multi-stage sampling was used to select a representative sample size of participants and non-participants. Descriptive analysis was run to reveal measures of central tendency and variability; while logistic regression was applied to determine factors affecting households' decision to participate in microfinance. Logistic regression analysis indicated that seven variables significantly influenced program participation were four of them significant at 1% (i.e. Education level, household size, membership of cooperative and extension contact); and the other two variables were found significant at 10% (i.e. the number of dependents and Distant from OMFIs); while another variable has significantly affected participation at 5%. Microfinance institutions have to create awareness of its service to less educated smallholder farmers. MFI institution needs to expand its satellite sites to access the farthest rural farmers.

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INTRODUCTION

Microfinance is economic development that mainly focuses on alleviating poverty by providing financial services to unemployed or low-income individuals who are devoid of accessing formal financial services. Hence, its scope is beyond micro-credit, which is out-skirted mainly to offer small amounts of loans to the poor. Thus, microfinance institution is a financial institution specializing in banking services for low-income groups, and it provides a broad range of services including insurance, transactional services, savings, credit, collateral, deposits, loans, payment services, and money transfers to poor and low-income households and their microenterprises. A microfinance institution provides account services to small-balance accounts that would not commonly be accepted by traditional banks (1)(2)(3). It also provides financial services to low-income but economically active borrowers who seek relatively small finance to their businesses, manage emergencies, acquire assets or smooth consumption. Hence, microfinance is a way to alleviate poverty, especially in rural communities where people do not have access to mainstream commercial banks (4)(5).

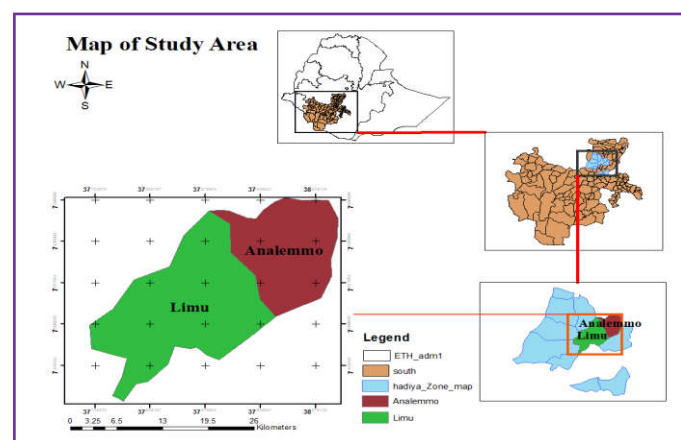
The real architect in microfinance is thus its ability to find a complement of techniques in product design and management that solve fundamental problems of controlling costs, building volume, keeping repayment rates, and preventing fraud while operating with poor people (6). For this reason, MFIs are vital institutions playing a role in the creation of economic opportunity and poverty alleviation. Recognizing the importance that several donors had placed on microfinance as a tool to achieve the millennium development goals, in the past few decades various efforts have been made to restrain poverty through different development strategies and policy interventions in Ethiopia. Among these strategies, the provision of microfinance services is one to reach out to the poor. In subsistence agriculture and low-income countries like Ethiopia, where smallholder farming dominates the overall national economy, peasant farmers often face scarcity of capital due to low levels of production to adopt new agricultural technologies (7); (8)(9). Hence, providing agricultural credit is a crucial issue to boost the sector, mainly of land and labour, and towards boosting production, income, employment, and thereby alleviate poverty. Credit accomplishes this task by enabling risk-averse small farmers to overcome their liquidity problems (10). Microfinance institutions started operations in Ethiopia following

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Proclamation No. 40/96, which regulates the businesses of microfinance in the country. Currently, there are 30 licensed MFIs and 448 branches with active client outreach of 2.3 million. These institutions have been trying to enlarge their client and area outreach for the last almost twelve years (11) (12). OMFI is one of the MFI established in Ethiopia in the South Nations Nationalities and Peoples Region following proclamation No. 40/1996 (13) (14). In Ethiopia, lack of finance is a significant problem that impedes the growth of production and income of the rural and urban population. Since access to service of financial institutions is very limited the significant number of people obtained financial service through informal money lenders, from their relatives and other informal sources. To reduce such types of problems the government of Ethiopia has taken several economic reforms such as creating income-generating activities and promoting entrepreneurs, encouraging savings and private investments and launching of micro and small-scale industries (15). Despite their significant contributions to OMFI, its ability to improve livelihood is still in question, and very few empirical studies have been conducted to examine its impact on the individual, household, community, and institutional levels. Therefore, the objective of this study was to analyze the determinants of farmers' participation and evaluate the impact of Omo microfinance on income, asset accumulation, and wheat production of smallholder farmers in the study area.

RESEARCH METHODOLOGY

Description of Study Area: The study was conducted in Analemo, and Lemo districts of Hadiya Zone which are geographically located in Southern Nations, Nationalities, and People's Regional State of Ethiopia between Latitude 7°3'19"-7°56'1" North and Longitude 37°33'14"-38°52'12" East. The location lies between altitude ranges of 880 to 3340 meters above sea level. Ana Lemo and Lemo districts are among eleven woredas of Hadiya zone. Ana Lemo is bordered on the southwest by Limo, and on the southeast by Shashogo Woreda. The district has a total population of 93,078, of which 49.09% are male, and 50.01% are females; 1.73% are urban dwellers, and 98.27% are living in the rural area (16) (17).



Source: Adopted from Ethiopian map

Figure 1. Map of the study areas

Sample Size and Sampling Procedure: Multi-stage sampling was used to select a representative sample. First, the Hadiya Zone was purposively selected because of proximity. Then Ana-lemo and Lemo districts OMFI were selected based on simple random sampling at the second stage. Subsequently,

based on program participation, households were stratified as program participants and non-participants in selected kebeles. At the fourth stage, Cochran's sample size determination formula (18) was used to determine the representative sample, and thus a total of 222 households were selected (107 participants and 115 non-participants). Subsequently, the probability proportional to the size was employed at the fifth stage to determine the number of respondents from three kebeles. Finally, at the sixth stage, systematic random sampling and sampling frame respective Kebeles were used to select respondents from respective kebeles.

Cochran Sample size determination formula

$$n = \frac{N}{1 + Ne^2}$$

Where n= required sample size

N= Total population size e= margin of error

Table 1. Sample size distribution among selected kebeles

Districts	TotalHH	Participant to OMF	Non-participant to OMF	Sample size
Ana-	K ₁ =400	310	90	37
Lemo	K ₂ =398	156	242	36
	K ₃ =427	127	300	38
Lemo	K ₁ =400	250	150	37
	K ₂ =409	230	179	37
	K ₃ =400	150	250	37
Total	2434	1223	1211	222

Source: Woreda OMFIS, 2019

Method of Data Collection and Source of Data: Primary data were collected from sampled respondents by using a semi-structured interview schedule. The data collected included demographic, socio-economic, and institutional characteristics of households. However, before conducting the final cross-sectional survey, an exploratory survey was held as formulating research to frame the problem for more detailed investigation, develop a working hypothesis, to get insights about the problem. Hence discussions were held with four focus group discussions and 12 key informants who have particularly informed perspectives on an aspect of the program. These include credit officers, microfinance managers, kebele administrators, elders, youth, women, economic and development office heads and the purpose was to have greater understanding, to test the feasibility of starting a more in-depth study, and to develop the methods to be used in any following research projects.

Methods of Data Analysis: Descriptive statistics indicators such as frequency, mean and percentages; and measures of dispersion, such as range, variance, and standard deviation; and inferential statistics tools like chi-square and t-test were computed to evaluate the statistical significance of mean differences between values of the participant and non-participant households. The results from descriptive statistics were also served to develop and specify suitable variables to be used in econometric analysis. The logit regression model was applied to determine factors that affect households' decision to participate in microfinance credit and estimate its impact in the study area. The model was appropriate to conduct a dichotomous dependent variable towards explaining the relationship between one dependent binary variable and

one or more nominal, ordinal, interval, or ratio-level independent variables.

RESULTS AND DISCUSSION

Demographic characterlike: Among different demographic characteristics tested in the study, households' educational level; and experience in credit and extension services have influenced participation in the microfinance positively and at 1 percent significance level; while family Size and distance to microfinance institution has influenced participation at a 5% significance level. But age has influenced farmers microfinance participation at a 10% significance level; Age: was a continuous variable measured in year and it indicated that the average age of total respondents was 40.15 years; while the mean age of credit users and nonusers was 37.51 and 49.33 years old, respectively. Similarly, with a range of 46 years, the largest proportions of respondents were in age amid 18 and 64 years, i.e. most of them were in productive age. Hence, the availability of a large number of youngsters in participant groups has helped participation in microfinance since these youngsters have the ambition to invest and accumulate wealth during their working age in the study area. However, those oldies participants were more interested in depending on their past saving and accumulated wealth for their consumption than participating in saving or borrowing activities. Likewise, the chi-square result indicated that there was a significant difference between participation and non-participation in microfinance at a 10% significance level. The result was in line with (19) who reported younger households, particularly in their middle-age tend to engage in different productive activities to increase their income and saving and gradually accumulate wealth to ensure higher future consumption and therefore their willingness for borrowing increases.

Entrepreneurial Experience: Participants of OMF program participants and non-participants have an average experience of 4.26 and 0.12 years for access to credit, respectively; and the mean difference between the participants and non-participant groups was significant at 1% level of significance. That means households' experience in Entrepreneurial activities has persuaded participants to get access to credit from OMF. Hence entrepreneurial experiences helped clients to set goals and strive to achieve them, take initiatives, and assume risks to stay onboard with OMF. The result was in line with Salwaet al.(2013) who confirmed experienced entrepreneurial clients were more participated in terms of handling assisted them to stay on participation in microfinance towards mastering the rules of the game, build confidence and thus increase their probability of borrowing.

Family size: The analysis indicated an average of family size for credit users and nonusers were 6.61 and 4.60 persons respectively, and the result was the significant result at 10%; indicating that household size positively and significantly influenced microfinance participation at $P < 0.05$. Hence, households with larger family members were involved better in microfinancing to get credit for more considerable living expenses from credit institutions. The result agrees with (20) who reported, household size was positively related to increases in household debt; where the large family size is usually associated with abundant labour endowment and households with many family members may encourage youths

to migrate to areas where they can work as labourers and thereby to generate additional income to support their families. Similarly, (21) reported that households with large family size were adopted agricultural technology in better ways.

Education: average education level of household heads was 5.12 and 3.03, for microcredit participants and non-participants, respectively. The result indicated that participants were relatively more educated than non-participants, and it was significant at 1% level of significance as a proxy for human resources. Better education entitlement of MFI participant farmers assisted them to obtain loans better than their counterparts since they were thought to be believed to repay loans. While borrowers need at least a reasonable level of literacy to understand loan conditions and sign loan agreements having a secondary education level or above, are likely to improve credit accessibility. This result made it hard for unbanked complements who usually lack investment for agricultural activities. This result is in line with (22) Morduch (2001), who indicated that it is a significant factor affecting loan repayment performances. Similarly, Likewise, (7) reported limited education has negatively influenced households to access to credit where most illiterate farmers in developing countries were denied to get loans since borrowers need at least a reasonable level of literacy to understand loans conditions and sign loan agreements. (23) identified that having a secondary education level or above has improved credit accessibility. Nevertheless, this reality contradicted with the primary purpose of Microfinance of providing financial services to the excluded people from the formal financial system.

Dependency ratio: With an average dependency ratio of 0.78 and 0.91, microfinance participants in the study area were lower than non-participants. The result indicated that out of 100 working persons 78 and 91 participants and non-participants were economically inactive, respectively. Hence, more of non-participants were not involved in the source of livelihood activities and did not support themselves and their families. Therefore, it can be concluded that non-participants carry more burden than the participant ones and respondents with a small number of dependents have a high probability of participating in the OMF program than their counterparts. This result is in line with (24) who noted that large household size with the probability of having more dependents consumed more of their income which otherwise could have been partly saved and invested in income-generating activities.

Institutional Support: The descriptive statistics results of continuous variables like education level, distance from MFI, family size, dependency number of dependents, and extension have significantly affected participation, and specific results are mentioned as follows

Distance to microfinance facility: minimum and maximum distance travelled from total respondents were 6 and 15 km, respectively. Thus, respondents who are in proximal distance to the OMF institution got location advantage and influenced households' participation in the OMFI loan program at a 10% significance level. However, clients in rural areas at least should be given leniency attention on collateral terms and extension of repayments than urban clients. The result agrees with (25) who witnessed distance between home and bank showed significant effects on the size of loan received in

Nigeria, where increased individuals loan size led to increased farm output, productivity, and income.

Extension contact for finance service: The results indicated households that received technical advice from agriculture extension agents have better access information on formal credit than counterparts; where the average number of extensions contact days for participants and non-participants of sample households was 3.44 and 0.84 days per month, respectively. The result was positively and significantly related to MFI participation at a 1% significance level. Those farmers who accessed extension service were more knowledgeable on traditional credit sources and thus got more opportunities to get agricultural credit to buy inputs like fertilizer, agricultural tools, and improved seeds by using the credit received from MFI. Therefore, the opportunity has positively influenced farmer's access to credit from the traditional sources. The result agrees with (14) who said participants who were receiving technical advice from agricultural extension services assisted to use formal credit in Ghana.

Membership of cooperatives: The study indicated three types of cooperatives with different legal structures were running in the study areas, which include formal, semi-formal, and informal. Here, both formal and semi-formal institutions were registered and subject to laws; and semi-formal institutions were not subject to banking regulation and supervision; while informal institutions were not delimited under any law at all and not registered. The result indicated 67% of MFI patron members of the study were benefited in voluntary savings, buying of shares (equivalent to savings), accessing credit services, and since the members were also the owners, they got a financial interest in the success of their cooperative, they were also benefited from increased income and bargaining power which swayed them towards giving full support and patronage. However, the rest of the households (non-participants) were not enjoying the opportunity. The result agrees with (5) who said individual loan size of farmers has increased due to membership in cooperatives which in turn assisted farmers to boost farm output, productivity, lowering their costs of acquiring inputs and hiring services such as storage and transport.

Table 1. Summary test of independent variables (for continuous variables)

Explanatory variable	Sample (N=222)		Participant (N=107)		Non-Participant (N=115)		P-Value	t/ χ^2 value
	Mean	STD	Mean	STD	Mean	STD		
Age	40.15	7.80	40.51	8.58	42.33	7.03	0.836	0.074
education	4.07	2.94	5.12	2.86	3.03	3.01	-5.28	0.000***
Family size	5.76	2.05	6.61	1.97	4.60	2.14	6.092	0.03**
Distance from microfinance	4.23	1.73	3.64	1.34	6.64	2.12	0.95	0.045*
Experience credit	2.38	2.69	2.26	2.23	0.12	0.46	6.24***	0.000***
Extension contact	1.93	2.51	3.43	2.94	0.84	1.27	5.23***	0.000***
Dependency	Ratio 0.85		0.78		0.91			

Source: Own survey result, 2019

*** and ** means significant at the 1%, 10% probability levels, respectively

Table 2. Summary test of independent variables (for dummy variables)

Explanatory variable	Category	Participated (N=107)		Total (N=222)		χ^2	P-value
		N	%	N	%		
Sex	Male	91	85	175	79	4.785	0.29
	Female	16	15	47	21		
Marital status	Married	95	88.8	192	86.55	0.934	0.384
	Otherwise	12	11.2	30	13.45		
Cooperative Membership	Yes	84	78.5	123	56.2	44.6	0.00***
	No	23	21.5	99	43.8		
Attitudes to Risk	Yes	10	9.3	25	11.15	0.758	0.384
	No	97	90.7	197	88.85		

Source: Own survey result, 2019

Table 3. Logit results of household program participation

Participation	Std. Err.	Marginal effect	p-value
Age	.0309	-.008	0.247
Head sex	.686	.055	0.743
Marital status	2.149	.023	0.965
Education level	0.825	.038	0.064***
Household size	0.148	.068	0.060***
Number of dependents	0.249	-.104	0.090*
Extension contact	.351	.265	0.002***
Membership of cooperative	0.499	5.043	0.000***
Attitude towards risk	.0303	.011	0.126
Distant from OMFIs	.166	-.206	0.06*
Experience in credit access	0.392	0.291	0.049**
Constant	2.953	0.72	0.470

Note: ***, ** and * are statistically significant at 1%, 5% and 10% probability levels respectively.
LR χ^2 (11) = 190.72 Prob > χ^2 = 0.0000 Pseudo R 2 = 0.547 Number obs = 222

Econometric Analysis result: The logistic regression analysis result which was run to explain the relationship between participation in microfinance (i.e. dependent binary variable) and other nominal, ordinal, interval, or ratio-level independent variables indicated that seven variables have significantly influenced program participation status. Among these variable, four of them significant at 1% (i.e. Education level, household size, membership of cooperative and extension contact); similarly two variables were found significant at 10% (i.e. the number of dependents and Distant from OMFIs) and the other variable which significantly affected participation at 5% was significant at 10% (i.e. the number of dependents and Distant from OMFIs): distance from microfinance was experienced in credit access. Education level, household size, membership of cooperative and extension contact was found to be positively related to the participation of OMFIs loan program, whereas the number of dependents and distance from microfinance of household was found to be negatively related with the participation of distance from microfinance.

Education: was found significant at a 1% significance level with a marginal effect of 0.038 indicating that as education level increase by a unit, the probability of smallholder farmers' participation in Omo microfinance increases by 3.78%, keeping other variables constant. Similarly, the positive coefficient of education indicated that Education level positively affected the probability of smallholder farmers' participation in the OMF program. This result agrees with (5) who indicated acquisition of knowledge in the participation of MFI helped clients for positive thinking, the attitude of self-help, and developing stimulated intellect to dig out existing opportunities to take the loan for better production technologies, engaged in off-farm/ farm activities and diversifying their source of income than the illiterate ones.

Family size: is positively associated with the probability of OMF participation at a 1% level of significance. An increase in the household size by one person increases the likelihood of OMF participation by 6.8%. The larger family size higher probability of participating in micro-finance than smaller family size. This result was consistent with the finding of (9) who reported household size depicted a positive relationship with household participation in microfinance. The level of significance is at 1%.

Extension contact: it was significant at 1%, and its marginal effect was 0.265 with a positive sign implying that extension contact has positively affected the probability of household participation in the Omo Microfinance loan program. Similarly, the marginal indicated a unit increase in extension contact augmented the probability of household participation in Omo Microfinance increase by 26.49%. The result was coherent with reports of (7) in which extension contact has positively influenced the relationship of cultivated land size with access to credit at a 10% significance level.

Conclusion and Recommendation

Summary and Conclusions

The study was conducted in Ana-lemo, and Lemo districts of Hadiya Zone and Multi-stage sampling was used to select a representative sample. Descriptive statistics were used to reveal measures of central tendency and variability while logistic regression was run to determine factors affecting

households' decision to participate in microfinance and estimate their impact in the study area. The result indicated among 11 demographic characteristics; households' education and experience in credit and extension services have influenced participation positively at 1 percent significance level; while family size and distance to microfinance institution has influenced participation at a 5% significance level. But age has influenced farmers microfinance participation at a 10% significance level.

Recommendations

Based on the findings of the study, the following recommendations were drawn from low-income earners and downgraded groups to participate and earn more income, so that they can improve their living standards through participation in livelihood activities. Microfinance institution has to create awareness of its service to less educated smallholder farmers. MFI institution needs to expand its satellites sites to access the farthest rural farmers Income generation activities should be proliferated and supported to resolve and lessen the dependency ratio microfinance institution should reach non-participants, clients, through cooperatives farmers should be addressed with extension contact to enhance the probability of household participation in Microfinance.

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