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Full Length Research Paper

Rural Households' Towards Off-farm and Non-farm Employment Opportunities in Assosa Zone, Western Ethiopia

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This study examined rural households' off-farm and non-farm employment activities and determinants of their participation in off-farm and non-farm employment opportunities in Assosa zone, western Ethiopia. The study used a primary data collected from 180 randomly selected households using interview schedule. In addition, FGD and key informant interview were used. Moreover, secondary data were also used. As to the method of data analysis, the study employed descriptive statistics and inferential statistics along with the binary logit model. The finding of the study revealed that the majority (66.1%) of sampled households was engaged in off-farm and non-farm employment opportunities. The model result showed that out of fifteen explanatory variables, the age of heads, settlement of heads, literacy status of heads, household size, extension contact, access to training, total income, membership in cooperatives and distance to market were found to have a significant impact on households' participation. Moreover, the study identified that lack of off-farm and non-farm employment opportunities, time constraint, lack of financial resources, lack of awareness and health related problems as major challenges to engage in off-farm and non-farm activities. Therefore, future policy should focus on investment strategies that promote households access to off-farm and non-farm activities as well as on enhancing farmers' awareness.

Keywords: Rural Household, Off-farm and non-farm, Binary logit model, Assosa Zone, Western Ethiopia

INTRODUCTION

Poverty and the living conditions of the rural community in developing countries, in which agriculture is the key sector to the economy, are highly heterogeneous problems (Bedemo et al., 2014). In the rural part of Africa, the incidence of the problems was much severe and diverse; so as to reduce the impact rural household's in such countries engaged in different off-farm and non-farm employment opportunities (David, 2010). As for IFAD (2011) finding, households in rural areas are earning an increasing share of their livelihood from off-farm and non-farm economy and conveyed that non-farm income accounts for about 35% of rural households income in Africa and roughly 50% in Asia and Latin America.

Particularly, Ethiopia is an agrarian country in which the majority of the community depends on this sector as a primary means of livelihood. The sector contributes about 43% of GDP, creates employment opportunities for more than 80% of the population and accounts for more than 83% of foreign exchange earnings of the country (UNDP, 2014). Despite its contribution to the economy as well as the livelihood of the society, rapid population growth in the country forced households to produce and make their living on the small size of land (FAO, 2012). Due to the decline in carrying capacity of agriculture as well as fragmentation of their holding and low farming income, the majority of rural households are exposed to food insecurity and chronic poverty (Seid et al., 2016). In addition, because of periodic drought and extremely variable environment making farming a risky

economic activity rural households' face fluctuation in their income. As to Bedemo et al. (2014) finding, rural households diversify their activities into off-farm and non-farm activities to reduce the diverse forms of risks and uncertainties associated with farming; create a way of smoothing their income over the years and seasons; and reduce their vulnerability to different kinds of shocks, seasonality, and trends. Moreover, off-farm employment has the potential to improve the income and well-being of rural households as well as helping to reduce income uncertainty through smoothing income by spreading risk across several activities in rural areas. Furthermore, through its income effect helps farm households to have opportunities to invest in more advanced agricultural technology that makes rural households highly profitable and encourages the transition from traditional to modern agriculture (Norsida and Sami, 2009). Moreover, Bedemo et al. (2013) supported that off-farm activities key in alleviating the problems of low agricultural productivity and the resulting low income.

Rural households in the study area are mainly dependent on subsistence farming activity as a major means of livelihood. This subsistence farming practice has been and is facing challenges such as insects, pests; land degradation which results in poor quality of land and animal diseases which cause a decline in agricultural production and food deficit in the area (BGRDGA, 2010). To cope up with these challenges rural households in the area engage in non-farm and off-farm activities which are undertaken to generate additional income and improve their wellbeing. But, there was no empirical research that supports the existing off-farm and non-farm employment opportunities practiced by the farmers in the area. (Gebrehiwot and Fekadu, 2012) argued that, intervention which can motivate households' participation to be effective there needs to critically investigate factors that determine rural households' engagement in off-farm and non-farm activities. Because well-designed policies and strategies that promote rural households, especially poorer ones, access to off-farm and non-farm income earning opportunities, which in turn improves their income and well being, depends on location specific knowledge (Babatunde et al., 2010). Therefore, a critical analysis of off-farm and non-farm employment opportunities available in the study area and factors determining households' participation in off-farm and non-farm is important to improve the response mechanisms related to poverty, food security and livelihoods improvement. This study aimed at investigating the off-farm and non-farm employment activities practiced by rural households and analyzing determinants of rural household's participation in off-farm and non-farm employment activities.

MATERIALS AND METHODS

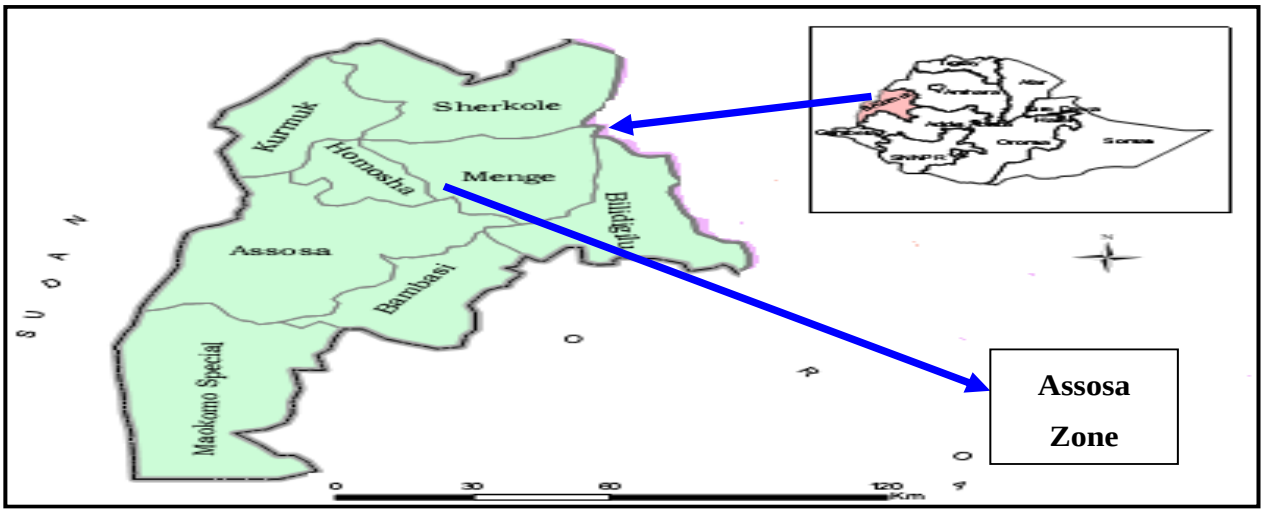

Figure 1: Map of the study area

The study area in figure 1 is one of the three administrative zones in BGRS of Ethiopia. It has a total area of 10,191.82km^2. Administratively, the study area is divided into seven districts, namely; Assosa, Homosha, Bambasi, Menge, Kurmuk, Sherkole and Odabildi-Guli districts. The zone has a total population of 283,707 people, out of which 144,616 and 139,091 are male and female, respectively. Furthermore, 86.28% of the

population lives in rural area and 13.72% lives in the urban area. The population density of the study area is 28 persons per kilometer square (BGRDGA, 2010.

The study employed multistage random sampling technique was used to select sample households. In stage one, out of seven districts in the administrative zone, two districts namely Assosa and Bambasi were randomly selected. In stage two, a total of 6 peasant associations (4 from Assosa district and 2 from Bambasi district) were randomly selected based on probability proportional to the number of PAs in each district. In the third stage, a total of 180 sample household heads was randomly selected based on probability proportional to the size of the households in the selected PAs.

In this study, both primary and secondary data were used. Primary data were collected from sample households through interview schedule. In addition, FGD and key informant interview were used to collect qualitative data. Secondary data were also obtained from regional and zonal offices, reports and the internet.

As to the methods of data analysis, the study employed descriptive and inferential statistics along with econometric model. Descriptive statistics such as mean, percentage and frequency were used. Independent t-test and chi-square test were also used to compare and contrast participant and non-participant households with respect to different explanatory variables. In addition, the study employed binary logit model to examine determinants of rural households' participation in off-farm and non-farm activities.

Binary logit model is the most commonly employed model to estimate the dependency of a dichotomous dependent variable on various explanatory variables. Thus, in this study since the participation status is a dummy dependent variable, binary logistic model was employed to identify the determinants of rural households' participation in off-farm and non-farm employment opportunities. The functional form of logit model is specified as follows (Gujarati, 2003):

$$Pi = E\left(Y = \frac{1}{Xi}\right) = \frac{1}{1+e^{-(\alpha+\beta Xi)}} = \frac{1}{1+e^{-(Zi)}} \quad \ldots\ldots (1)$$

For ease of exposition, the logit becomes a linear function of different explanatory variables:-

$$Li = ln\left[\frac{Pi}{1-Pi}\right] = Zi = \beta o + \beta 1X1 + \beta 2\, X2 + \ldots + \beta nXn \quad \ldots\ldots\ldots\ldots (2)$$

Where: P_i is the probability of being participant household, L_i is the logit, X_i is a vector of explanatory variables and β_n is a vector of parameters to be estimated. It should be noted that the estimated coefficients do not directly indicate the effect of the change in the corresponding independent variables on probability (P) of the outcome occurring. Rather the coefficients indicate the effect of individual explanatory variables on its log of odds L_i (Neupane et al., 2002). Therefore, to indicate the effect of explanatory variables on the odds, the odds ratio is an appropriate tool.

Operational Definition of variables

Dependent variable	**Measurement**	**Hypothesis**
Rural households participation status	Dummy variable (1= participant, 0= non-participant)	
Independent variables		
Nature of HH settlement	Dummy (1= settler, 0= native)	+
Sex of HH head	Dummy (0= female, 1= male)	+
Livestock holding	Continuous (TLU)	-
Land Holding	Continuous (hectares)	-
Literacy status	Dummy (1= literate, 0= no formal education)	+
Total income	continuous (Birr)	+
Access to training	Dummy(1= access to training, 0=otherwise)	-
Access to Fertilizer	Dummy(1= if used, 0=otherwise)	-
Access to Improved seed	Dummy(1= if used, 0=otherwise)	-
Age of HH head	Continuous (years)	-
Household size	Continuous (number)	+
Frequency of extension contact	Continuous (number of visit per year)	+
Access to Credit	Dummy(1= if the HH get credit, 0=otherwise)	+
Membership in cooperatives	Dummy(1= if a member, 0=otherwise)	+
Distance to market	Continuous (km)	-

RESULTS AND DISCUSSION

Demographic and Socioeconomic Characteristics of Households

Table 1: Socioeconomic characteristics of the sample households

Variable	Frequency(N)	Percent (%)
Nature of households settlement (settler)	87	48.33
Sex of household head(male)	152	84.4
Literacy status (literate)	84	46.7
Access to training (yes)	74	41.1
Access to credit (yes)	50	27.8
Access to Improved seed (yes)	100	55.6
Access to Fertilizer (yes)	137	76.1
Cooperative membership (yes)	105	58.3

Source: Own survey result, 2016, N = 180

For this study, primary data were collected from a total of 180 sampled households. Out of the total sample households surveyed, 84.4% were male headed and 15.6% were female headed. Regarding the nature of the households' settlement, the result showed that 48.33% of the sampled households were settlers and the rest 51.67% were natives. The result also shows that 46.1% of the household heads were literate and 53.9% were illiterate. This implies that more than half of the households were illiterate in the study area. Furthermore, the result showed that 40.5% of the respondents were trained on issues related to agricultural production and productivity, whereas 59.5% were not. Moreover, the study pointed out that 27.7% sampled households had access to credit, whereas 72.3% reported the opposite during 2014/15 production year. In addition, the result also confirmed that 76% of the respondents had access to fertilizer, whereas 24% reported the opposite. Out of the total sample households surveyed, 56% reported that they used improved varieties, whereas 44% reported the opposite. Moreover, around 58% of the sampled households were members of cooperatives and the rest were not (Table 1).

Regarding continuous demographic and socioeconomic factors, the descriptive statistics result showed that the average age of the household heads were 46 years with the maximum being 75 years and the minimum age being 23 years. Moreover, the survey result revealed that the mean livestock holding of the sampled households in terms of tropical livestock unit (TLU) was 3.45, the maximum and minimum being 23.67 and 0 TLU, respectively. Concerning the income, rural households in the study area earn income from on-farm activities mainly from the sale of crops, sales of livestock and livestock products (milk and butter) and off-farm and non-farm activities such as trading, daily labor, wild fruit gathering, mining, handicraft, etc. Farm income of sampled households ranges from Birr 800 to 53280 with an average of Birr 7261.52 per annum. In addition, income from off-farm and non-farm activities ranged from 0 to 60588 Birr with an average of Birr 7001.5 per annum. Generally, the mean total income of the sampled households was Birr 13892.6 per annum with maximum and minimum total income of Birr 95000 and 800, respectively (Table 2).

The study also indicated that the household size of the sampled households varies from 1 to 26 with an average household size of 7.05, which is higher than the national average family size of 4.93 (CSA, 2007). Regarding the landholding of the households, the result indicated that the average landholding of the sampled households was 2.42 hectares with the maximum and minimum holding of 10 and 0.25 hectares, respectively. Furthermore, the study also revealed that households' average distance from the nearest market was about 3.16 kilometers with the minimum and maximum distance of 0.1 and 9.5 kilometers, respectively. Moreover, the result also shows that the frequency of extension contact with the farmers ranges from 0 to 36 times with an average contact of 14.05 times per year (Table 2).

Table 2: Socioeconomic characteristics of the sample households

Variable	Mean	Std. Dev.	Minimum	Maximum
Age of household head (Years)	46.03	11.5	23	75
Household size (Number)	7.05	4.2	1	26
Distance from market (Km)	3.16	2.58	0.1	9.5
Livestock holding (TLU)	3.446	3.73	0	23.67
Farm income (Birr)	7161.52	9105.06	800	53280
Off-farm & non-farm income (Birr)	7001.5	11026.1	0	60588
Total income	13892.66	15758.12	800	95000
Extension contact (Number)	14.05	5.69	0	36
Landholding (Hectare)	2.42	2.06	0.25	10

Source: survey result, 2016, N = 180

Rural households' participation status in off-farm and non-farm activities

In the study area, farmers have been engaged in different types of off-farm and non-farm employment opportunities. The descriptive statistics result indicated that the majorities (66.11%) of rural households were engaged in off-farm and non-farm activities, whereas about 33.89% of the households were not engaged in any kind of off-farm and non-farm employment opportunities so as to improve their income and livelihood (Table 3).

Table 3: Rural households' participation status in off-farm and non-farm employment opportunities

Households Status	Frequency (N)	Percentage (%)
Participants	119	66.11
Non-participants	61	33.89
Total	180	100

Source: survey result, 2016, N = 180

In the study area households were engaged in both wage employment and self-employment. The study revealed that, out of the total participating households, 41.2% of sampled households were engaged in unskilled wage employment, whereas 22.7%, 19.33% and 8.4% of the households were employed in the government sector, casual agricultural employment and private sector, respectively (Table 4). Furthermore, the study pointed out that about 35.3%, 32.8%, 26.05%, 24.4% and 14.3% of the households in the study area were engaged in petty trade, collecting and selling of firewood and charcoal, mining, handicraft and others, respectively (table 4).

Table 4: Summary of off-farm and non-farm activities practiced by rural households in the study area

Participant households (N= 119)		
Types of off-farm and non-farm employment opportunities	**Frequency (N)**	**Percentage (%)**
Wage employment		
Casual agricultural labor	23	19.33
Government sector employment	27	22.7
Unskilled wage employment	49	41.2
Private sector employment	10	8.4
Self-employment		
Mining	31	26.05
Trade	42	35.3
Collecting and selling of firewood and charcoal	39	32.8
Handicraft	29	24.4
Others	17	14.3

Note that a household and his/her family members can engage in more than one off-farm and non-farm activities.

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Comparison of participant and non-participant households using explanatory variables

Table 5: Summary of inferential statistics result of continuous explanatory variables.

	Non-participants (N=61)			Participants (N=119)			t-value
Independent Variables	**Min.**	**Max.**	**Mean**	**Min.**	**Max.**	**Mean**	
Age of Household head (Years)	26	75	48.59	23	70	44.73	2.043**
Household size (No.)	1	25	6.7	2	26	7.24	-0.78
Land Holding (hectare)	0.35	10	2.556	0.25	10	2.344	0.649
Total income (Birr)	800	40600	7628.77	800	95000	17103.5	4.91***
Frequency of extension contact (No.)	10	36	17.38	0	30	12.35	6.249***
Livestock ownership (TLU)	0	17.29	3.75	0	23.67	3.29	0.793
Distance to market (km)	0.05	9.5	3.64	0.05	8	2.91	1.682*

***, ** and * significant at 1%, 5% and 10% probability level, respectively.

The study employed independent t-test and chi-square test to make a comparison (to make sure the presence or absence of difference) between the participant and non-participant households. The mean values of continuous variables in the two categories were compared using independent t-test. The result of independent t-test pointed out the presence of a significant mean difference between the two categories in terms of age of household head, total household income, frequency of extension contact and distance to market. The result indicated that the mean age of participant households (44.73 years) was less than the non-participant households (48.59 years). The study also showed that those farmers who were participating in off-farm and non-farm activities had relatively better mean total income than non-participants. The mean value of total household income earned by those farmers who were engaged in off-farm and non-farm employment opportunities was Birr 17103.55, while it was Birr 7628.77 for non-participant households. Furthermore, it also indicated that those households who were engaged in off-farm and non-farm employment income generating activities had less frequency of extension contact than those households who were not participants in off-farm and non-farm activities. The mean value of extension contact received by participant households was 12.35 contacts, while it was 17.38 for the non-participant household. Moreover, the finding of the study showed that the mean distance to the nearest market for participant households was less than the mean value of distance for non-participants non-participant households. The mean distance from the nearest market for participants was 2.91 KMs but it was 3.64 KMs for those households who were non-participants in off-farm and non-farm employment opportunities to draw their livelihood (Table 5).

On the other hand, a chi-square test indicated the existence of statistically significant difference between the two categories in terms of 3 discrete variables. More specifically, the test revealed that there was a significant difference between those households who were participants in off-farm and non-farm employment opportunities and non-participants in terms of the literacy status of household heads, access to training and participation in cooperatives at less than 10% significance level (Table 6).

Table 6: Summary of inferential statistics result of discrete explanatory variables

Independent Variables	Response	Non-participants(N=61)		Participants(N=119)		χ2 value
		Frequency (N)	Percent (%)	Frequency (N)	Percent (%)	
Sex of household head	Female	10	5.6	18	10	0.049
	Male	51	28.3	101	56.1	
Nature of households settlement	Native	37	20.6	56	31.1	2.98
	Settler	24	13.3	63	35	
Literacy status of the household head	Not engaged in formal education	47	26.1	49	27.2	20.85***
	Literate	14	7.8	70	38.9	
Access to Improved seed	No	30	16.7	50	27.8	0.84
	Yes	31	17.2	69	38.3	
Access to Fertilizer	No	13	7.2	30	16.7	0.337
	Yes	48	26.7	89	49.4	
Access to Training	No	28	15.6	78	43.3	6.43**
	Yes	33	18.3	41	22.8	
Access to Credit	No	43	23.9	87	48.3	0.138
	Yes	18	10	32	17.8	
Membership in cooperatives	No	36	20	39	21.7	14.427***
	Yes	25	13.9	80	44.4	

***, ** and * significant at 1%, 5% and 10% probability level, respectively.

Determinants of Rural Households' Participation in Off-farm and Non-farm Employment Opportunities.

A binary logit model was estimated to examine the determinants of rural households' participation decision in off-farm and non-farm employment activities. The overall model is significant at 1%. Therefore, in this study, only those variables, whose coefficients were statistically significant at less than 10% probability levels, were discussed. Settlement of household head, Literacy status of household head, the age of household head, household Size, total annual income, frequency of extension contacts, participation in cooperative, distance to market and access to training were significant variables determining household's participation decision (see table 7). But the rest were insignificant variables.

Nature of Settlement: as expected, settlement of the HH head positively affects households' participation in off-farm and non-farm employment at 5% significance level. From the model outcome, ceterus paribus, the odds ratio in favor of participation in off and/or non-farm activities increases by 8.429 as a household head is settler household (Table 7). This could be due to fragmentation and small size of holding of settler farmers, these in turn forces households and their members to engage in off-farm and non-farm activities to ease the consumption pressure imposed on the family and to meet other family requirements.

Literacy status of household heads: as expected, it determined households' participation in off and non-farm employment opportunities positively and was found statistically significant at 10% probability level. From the model result, ceterus paribus, the odds ratio in favor of participation in off and non-farm activity increases by 2.616 as the household head is literate. This is due to the fact that literate farmers can easily obtain information regarding the importance of engaging in off-farm and non-farm income generating activities to improve their livelihood, as well as they, can participate in wage employment that requires knowledge and skills.

Age of household head: It affected farmers' decision to participate in off-farm and non-farm activities negatively and significantly at 5% significance level. From the model output, ceteris paribus, the odds ratio in favor of participation decision in off-farm and non-farm employment opportunities decreases by a factor of 0.945 as the age of the household head increase by one year. The possible reason is that elder farmers are well established and more experienced in agricultural production, more resistant to new ideas and information; they are more likely to be set in their ways and may not venture into new diversification activities. This finding is similar to that of Fikru (2008).

Household size: It was found to have a positive and significant effect on household participation in off-farm and non-farm employment opportunities at 10% probability level. Ceteris paribus, the odds ratio in favor of participation decision in off-farm and non-farm employment activity increases by a factor of 1.186 as household size increased by one person. This could be due to the relation between larger family size and household labor in order to meet basic needs of the family. The other possible justification is that as the size of family members increase it results in the decline in carrying capacity of agriculture, because of these households with large family size forced to engage in off-farm and non-farm activities that generate income for the farm family to satisfy their requirement.

Table 7: Parameter estimates of the Binary logit model for determinants of rural households' participation in off-farm and non-farm employment opportunities.

Explanatory variables	Coefficients	Odds Ratio	p-value
Settlement of the household head	2.132**	8.429	0.015
Sex of the household head	0.622	1.863	0.382
Age of the household head	-0.0568**	0.945	0.039
Literacy status of the household head	0.962*	2.616	0.061
Household size	0.170*	1.186	0.062
Livestock holding	-0.125	0.8831	0.189
Land Holding	-0.0195	0.981	0.935
Ln of total annual cash income	1.373***	3.947	0.000
Improved seed use	0.048	1.049	0.937
Fertilizer use	-0.807	0.446	0.264
Access to training	-0.943*	0.389	0.092
Frequency of extension contact	-0.241***	0.786	0.000
Access to credit	-0.957	0.384	0.144
Membership in cooperatives	1.476***	4.377	0.008
Distance to market	-0.271**	0.763	0.033
Constant	-6.575**		0.022
Number of observation		180	
LR chi^2		114.25	
Log likelihood		-58.126	
Prob > chi^2		0.0000	
Pseudo R^2		0.4957	

***, ** and * significant at 1%, 5% and 10% probability level, respectively.

Total annual household income: As expected, this variable found to have a positive and significant influence on households participation in off-farm and non-farm employment opportunities at less than 1 % probability level. From the model result, other factors being constant, the odds ratio in favor of participation decision in off-farm and non-farm employment activities increases by a factor of 3.947 as income of the household increases by 2.7 Birr. This is because households with large total income can easily meet their consumption as well as other family requirements and beyond that they go for demand pull livelihood outcomes (such as accumulation of assets, more income, *etc.*). Thus, they can easily overcome financial constraints to engage in non-farm and off-farm activities. This finding is in line with the finding of Yizengaw et al. (2015).

Extension contact: It has a negative and significant impact on households' participation decision in off-farm and non-farm employment opportunities at 1% significance level. From the model result, other things being constant, the odds ratio in favor of participation decision in off-farm and non-farm employment activities decreases by a factor of 0.786 for a unit increase in the frequency of extension contact. The possible justification is that extension services are an important source of information on agricultural technology and agronomic practices. The provision of important information on agricultural production and technical assistance on agricultural activities leads farmers to concentrate on agricultural production rather than participating in off-farm and non-farm employment opportunities. This finding is in line with the findings of Seid et al. (2016).

Access to training: It is found to have a negative and significant effect on households' participation decision in off-farm and non-farm employment opportunities at 10% significance level. From the model result, holding other factors constant, the odds ratio in favor of participation decision in off-farm and non-farm activities decrease by 0.389 as the farm household gets access to training. This could be due to almost all the training provided to the farmers were on means of enhancing agricultural production and productivity. This in turn aids farmers focus on agricultural production to obtain a higher income to meet their family requirements through improving their agricultural production skills, knowledge, and experiences. The result of the study is consistent with findings of Yishak et al. (2014).

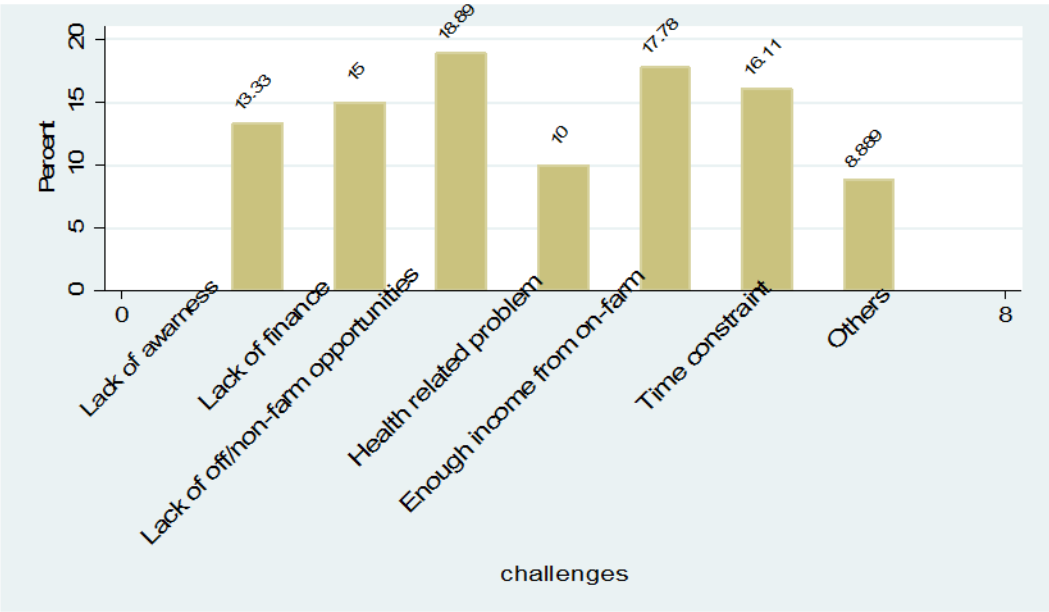

Figure 2: challenges/barriers to households' engagement in off-farm and non-farm activities

Membership to cooperatives: As expected, this variable found to have a positive and significant influence on households participation in off-farm and non-farm employment opportunities at less than 1% significance level. From the model outcome, ceterus paribus, the odds ratio in favor of participation decision in off-farm and non-farm activities increase by 4.377 as the farm household becomes a member of cooperative. The possible reason could be cooperatives are an important social capital that promotes sharing of knowledge, information, experience, *etc.,* among households about the value of engaging in off-farm and non- farm activities. In addition, being a member of a group (cooperatives) opens a means of gaining off-farm and non- farm employment opportunities. This finding is consistent with the findings of Adugna and Wagayehu (2012).

Distance to Market: It has a negative and significant impact on households' participation decision in off-farm and non-farm employment opportunities at 5% significance level. From the model result, other things being constant, the odds ratio in favor of participation decision in off-farm and non-farm employment activities decreases by a factor of 0.763 as the distance from the market center increase by one kilometer. The possible justification is that markets serve as an important source of off-farm and non-farm employment opportunities and information which promotes their participation decision. Those farmers living near the market center can easily access information and engage in off-farm and non-farm activities to increase their income and improve their livelihood.

Challenges for Households Participation in off-farm and non-farm employment opportunities

The study has identified six major factors as barriers/challenges for households to participate in off-farm and/or non-farm activities. The descriptive statistics (histogram) showed that about 18.89% of rural households mentioned the lack of off/non-farm employment opportunities as their main challenge to participate in off-farm and non-farm activities to improve their living standard. In addition, about 17.78%, 16.11%, 15%, 13.33%, 10% and 8.89% of the sampled households mentioned enough income from farming activity, time constraint to engage in off and non-farm activities, lack of financial resources, lack of awareness, health-related problems and others, respectively, as their major challenges to participate in off-farm and/or non-farm employment opportunities (Figure 2).

CONCLUSIONS AND RECOMMENDATIONS

Poverty and food insecurity are key problems in developing countries that are highly dependent on the agricultural sector as a source of livelihood. These problems are pertinent problems in Ethiopia in general and the study area in particular as the economy is mainly dependent on agriculture. Due to decline in carrying capacity and vulnerability of the agriculture sector to different kinds of shocks in the study are rural households engage in different types of off-farm and non-farm employment opportunities. Thus, the study

identified off-farm and non-farm employment activities practiced by rural households and examined determinants of rural household's participation in off-farm and non-farm employment opportunities using a data collected from 180 rural household heads. Accordingly, the finding of the study indicated that the majority (66.11%) of rural households was engaged in off-farm and non-farm employment opportunities. Furthermore, out of the total participant households 41.2%, 22.7%, 19.33% and 8.4% of sampled households were engaged in unskilled wage employment, employed in the government sector, casual agricultural employment, and private sector, respectively. Moreover, the study also pointed out that about 35.3%, 32.8%, 26.05%, 24.4% and 14.3% of the households in the study area were engaged in petty trade, collecting and selling of firewood and charcoal, mining, handicraft and others, respectively.

Independent t-test and chi-square tests conveyed the existence of a significant difference between participants and non-participant households' in terms of age of household head, total income, frequency of extension contact, distance to market, literacy status of household heads, access to training and membership in cooperatives. The binary logit model results figured out that settlement of household head, literacy status of household heads, household size, total income and membership in cooperatives have a positive and significant effect on rural household's participation in off-farm and non-farm employment activities while age of household head, access to training, frequency of extension contact and distance to market found to have negative and significant effect on rural households participation on those activities. Finally, the study identified that 18.89%, 17.78%, 16.11%, 15%, 13.33%, 10% and 8.89% of rural households mentioned lack of off/non-farm employment opportunities, enough income from farming activity, time constraint to engage in off and non-farm activities, lack of financial resources, lack of awareness, health-related problems and others, respectively, as their major challenges to participate in off-farm and non-farm employment opportunities.

Therefore, based on the findings of the study policies as well as actions directed towards improving the living standard of the rural population in the study area should focus on:

- Enhancing settler households' knowledge and access to off-farm and non-farm employment opportunities;
- Improving rural households' access to education as it enhances their access to important information and off-farm and non-farm employment opportunities.
- Enhancing rural households' awareness about the role of participation in cooperatives as it promotes access to social capital from which they can gain off-farm and non-farm employment opportunities;
- Improving households' access to income generating opportunities through designing policies and investment strategies.
- Enhancing elder households' awareness to ensure availability and dissemination of accurate information as it helps them to intensify farming rather than diversifying their activity into off-farm and non-farm activities.
- Enhancing households access to markets through improving and developing different infrastructures as it serves as an important source of off-farm and non-farm employment opportunities.
- Finally, intervention should focus on improving access to off-farm and non-farm opportunities, awareness creation, *etc.*, for those households who have large household size.

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