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Response of youth participation in agricultural diversification as rural job creation work in rift valley for afar region in Ethiopia

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Abstract

Even though agriculture has ample potential to absorb a large number of people, youths tend to stand away from the subsector. As a result, rural job creation works were started in southern Ethiopia by participating youth in different agricultural enterprises in the form of groups and cooperatives. However, as compared to sector potential, youths are not participating in agricultural job creation works in Ethiopia. This study was intended to assess factors affecting youth participation in agricultural enterprises in selected districts of Different region oromia, amhara, afar, SNNP, A.A and Diredawa city administration in Ethiopia. A multistage sampling procedure was followed to select 160 sample youths. Collected data from sampled youths were analyzed by both descriptive statistics and a probit econometric model. Among the agricultural enterprises, the majority of the youths (63.3%) preferred livestock enterprises indicating livestock sector job creation capacity in Ethiopia. seasonal nature of agricultural income, fear of agricultural risk, and lack of initial capital were the top three factors hindering youth participation in the agricultural enterprise as rural job creation works. probit model result shows that, among the hypothesized variables, education level, credit getting bureaucracy, lack of initial capital, fear of the group, risk and uncertainty, and lack of working place determine significantly youth participation in agriculture enterprises. Hence, re-spective bodies must group youths based on their preferred interest and evaluate their business plan critical before credit disbursement, while solving credit providing terms problems on the microfinance side and the introduction of agricultural insurance through these youth agricultural enterprises for agricultural risk fear needs stakeholders' interventions. Overall, initial savings, interest rate, and payback period of credit need special policy adjustments to increase youth participation in an agricultural enterprise.

Keywords: Youth participation, rural job creation, Ethiopia

Introduction

Agricultural sector employed more than 68% of the country population in Ethiopia ^[1]. Entire labor force of Ethiopia has tripled over the last three decades ^[2]. Creation of employment become ever more challenging for such a speedily rising labor force in the country without considering the agricultural sector ^[3]. Agricultural sector has enormous potential and booming businesses to provide considerable opportunities to youth entrepreneurs with full and active government backing ^[4]. Rural youth employment presents a thoughtful duty to Ethiopia due to high underemployment, growing youth landlessness, poor rural infrastructure, and limited access to finance for the youth to start their own business ^[2,5-8]. Leads to insignificant rural job creation and an increase in excess internal migration to urban areas and abroad ^[4,9].

Agriculture has a high prospective to engage a massive number of people in Ethiopia, youths tend to stand away from the sector ^[7,10]. Particularly, young graduates from higher education are not willing to take agriculture as their main livelihood as reported by many studies ^[5,7-9]. May be due to a lack of good governance (corruption, bias, bureaucracy, and discrimination), lack of social net-works, a divergence between skills and the labor market, and low-quality educational policy and systems ^[7,11]. Having recognized the importance of the agriculture sector, the Ethiopian government is additionally putting concerted efforts to promote and make more awareness among the youth about the potentiality of the sector ^[12,13]. However, in rural areas, young people leave school at a very early age and begin to work in subsistence agriculture. In urban areas, youths face high rates of unemployment and a school-to-work transition that is more than twice as long as in rural areas ^[14].

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Currently, there is a job scarcity in governmental as well as private sectors even for more established fields in Ethiopia [7,8]. To reduce the unemployment rate of youth, the Ethiopian government is working toward young people by encouraging them to start small agribusinesses [3, 10]. To start these agribusinesses, Ethiopian youths who are volunteering to organize themselves in associations and groups to become entrepreneurs are encouraged since it is a precondition to access microfinance [11, 15]. Features justify the significance of the link between youth employment and agri-business in framing development policy. Since the agricultural sector has a lion space to create a suitable working environment for the youth as well as other rural and urban citizens in Ethiopia, it needs development policy framing [9, 12, 15].

Ethiopian government worked on a lot of initiatives to change the interest of youth towards looking at the agriculture sector as one of the self-employed opportunities for the last decade [3, 16]. As a result, youths are organized into groups and associations based on the members' size and the type of agricultural enterprises that they are willing to participate in their respective district office of youth and sport in the whole region of the country [13, 15, 16]. Even if youths have high encouragement of the government to start micro- and small agricultural enterprises in the country, youths have less willingness to initiate and start their micro and small agricultural enterprises [15]. Further, after they are organized into groups and associations, some of the youths are not starting business enterprises as they intended after getting the credit [15, 16]. Not only this, some of them are not effectively running their enterprises properly based on agreements with the government they made. As a result, a huge amount of money from the government that was invested in youth enterprises was not used functionally. To overcome the issues, an enabling policy and regulatory environment are fundamental to attracting young people to the agricultural sector [4, 17, 18].

Different studies have been done on the participation of youth in agricultural enterprises in Ethiopia [3, 5, 6, 8, 9, 11, 12, 15, 16, 19]. Most of these studies emphasize the characterization of youth participation in agriculture with more focus on barriers and opportunity. Even though youth participation in agriculture has a lot of problems, the reasons behind them are not identified [7, 11]. To help enabling policy improvement, there is a lack of evidence-based information in Ethiopia specifically on youth participation in agricultural enterprise [7]. Nevertheless, none of the formerly conducted studies considered the aspects that bound the youth participation likelihood in the rural agricultural enterprise as a job creation mechanism in Ethiopia. Although the Southern Nation Nationalities and Peoples Regional (SNNPR) state used agricultural enterprises as the major rural job creation work for youth, none of the previous studies in Ethiopia were incorporated as a study area. Specifically, the reason behind why youths have low interest to participate and even withdraw themselves after their engagement in agricultural enterprises was uninvestigated in previous studies. In addition, what factors hindered youths from agricultural enterprise initiation was not been considered so far in the SNNPR of Ethiopia. Is an unblemished research gap in Ethiopia, while agriculture is a leading sector with little youth engagement. Investigating this research gap has vital importance to government and development partner institutions to carry out evidence-based policy advocacy and public awareness to enhance the participation of youths in an agricultural enterprise. A better understanding of factors that affect youth participation in the agricultural enterprise as job creation works at the micro-level

was required by organizations concerned with community development and policymaking [17]. This study was intended to assess factors affecting youth participation in agricultural enterprises in selected different region Oromia, Amhara, Afar, Tigray SNNP, Addis Abeba and Diredawa city Administration unemployment youth with the following specific objectives:

- i) Identifying the types of agricultural enterprises that youths are participating in with existing challenges
- ii) Identifying the determinants of youth participation in agricultural enterprises in the Afar region of Ethiopia

Research Methodology

Sampling and Sample Size Determination

Study was conducted in Afar Region SEREDO Integrated Agricultural Center Amehara woreda, Awash 40 surrounding Awash 40 Ethiopia. To select the representative youths from the selected study area, this study had followed multistage sampling procedures. In the first stage, keeping Basketo special district as it is, one district from each of the three zones was selected purposefully based on the presence of a higher number of youth groups and associations as compared to other districts. In the second stage, two kebeles (the smallest administrative unit in Ethiopia) were selected purposively from each selected district based on the presence of a higher percentage of youth groups that are participating in micro-and small agricultural enterprises. In the third stage, 20 representative youths were selected randomly from a list of youths at each selected kebele. Finally, a total of 160 youths were selected accordingly and included in this study for a further interview as a sample size.

Methods of Data Collection

Study used both primary and secondary data sources to get qualitative and quantitative data on youth participation in agricultural enterprises. Primary data on access to land, access to credit sources, and availability of information for initiation and attitude were collected to know their extent of influence on the willingness of rural and peri-urban youth to participate in micro-and small agricultural enterprises, while data on acceptance, type of small agricultural enterprises, the early problem for business initialization, training to enhance skill and knowledge, product type, time of initiation and completion, the role of the institution, and market access were collected to investigate their extent of influence on effectiveness in the enterprises that youths have participated. Finally, socio-economic, political, and cultural constraints and opportunities for youths' participation in micro- and small agricultural enterprises were collected by using semistructured questionnaires and focus group discussion (FGD).

Methods of Data Analysis

Both descriptive and econometric methods of analysis were used for this study. Descriptive statistics such as mean and percentages were used to analyze and quantitative data, while among econometric models, the probit model was used to analyze determinants of youth participation in agricultural enterprises.

Econometric Model Specification

Different econometric models were applied to analyze the determinants of youth participation in different studies. Of the econometric models, the binary models and to some extent multiple linear regression (MLR) model were applied so far [20]. To decide on the fittest econometric model, the dataset was systematically checked. As a result, the binary models such as

logit and probit models were the only possibilities used for this study. Since the probabilities are bounded between 0 and 1 for these models, they fit well into the nonlinear relationship. Even though the binary models have a quite alike cumulative normal function (probit) and the logistic function (logit) [13, 20], Gujarati [21] has noted the main difference by demonstrating that the logistic function has a slightly fatter tail as compared to probit model distribution. In addition, different studies suggested that the use of the probit model is more advantageous due to its normal distributional nature of latent error terms [18, 20, 22, 23]. Since our data resembles a normal distribution, the probit model was used among the alternative logit model to estimate the probability of youth participation in agricultural enterprises. Dependent variable (youth participation) was measured by using a dummy variable that took up a value of 1 when the interviewed youths have participated in any agricultural enterprise as job creation works, and 0 otherwise. The applied probit model with its functional form was given as

$$Y_i \mid \beta_i X_i + \mu_i \mu_i \sim N(0, 1), \quad (1)$$

Where Y_i is youth participation in agricultural enterprise that takes 1 if participating and 0 otherwise. X_i is a vector of hypothesized independent variables that affect youth participation decision. β_i is a parameter to be estimated that measures the effects of independent variables. μ_i is a normally distributed error term with a mean (0) and constant variance.

Variables Hypothesized for Econometric Model Analysis

Review of the existing literature suggests that a youth's decision to participate in an agricultural enterprise is often determined by the youths' profile, ownership of productive assets, sociocultural norms, peer influence, and institutional issues [8, 9, 11, 13, 15, 17, 19, 24-27]. Based on the existing literature, the potential explanatory variables that were supposed to influence youth participation in the agricultural enterprise are summarized in Table 1.

Results and Discussion

Descriptive Statistics Results

Section describes the socioeconomic characters of sampled youths, types of enterprises available in the study area, and constraints that affect youth participation in an agricultural enterprise.

Socioeconomic Characteristics of Youths

Out of the total sample size of respondents handled during the survey in the study area, 10.63% were females, while the majority (89.38%) were males (Table 2). This implies that males are more participating in micro- and small agribusiness than females, which may be due to the case that females fear taking responsibility in undertaking agribusiness and lack awareness about the enterprise formation in the study area. Concerning education level, the majority of the youths are under the high school level (grade 9-12). Only about 14% of youths have a diploma and above. This indicates that as the education level of youth increases, youths are searching for another work opportunity rather than participating in youth groups and running an agricultural enterprise as a business. Sampled result in Table 2 shows that the majority of youth who participated in the agricultural enterprise as rural job creation work have got married. This may be due to a cultural effect of the study area, as the communities are expecting that if youths reach the age of marriage, it is highly encouraged to be getting married.

Livelihood Activity

Livelihood activities done by youths in the study area are crop production, livestock production, non/off-farm activities, and to some extent small- and micro-enterprises. According to the survey results in Figure 1, the proportional share of youth's livelihood in the agricultural enterprises was considered the main livelihood activity next to crop cultivation in the study area.

Types of Youths Participating in Agricultural Enterprises

In this section, the main types of micro- and small agricultural enterprises in which youth are involved were discussed. Accordingly, many types of micro- and small agricultural enterprises were identified in which many youths are engaged in employment for livelihood improvement in the study area. Of these enterprises, cattle fattening, poultry production, sheep and goat production, dairy production, and crop production were the main micro- and small agricultural enterprises in which youth have been engaged in the study area (Figure 2).

Majority of the organized youths were based on livestock enterprises (63.3%), while the remaining 37% of the youths were organized in crop-based enterprises. Among the livestock enterprises, poultry, small ruminants, and cattle. Advances in Agriculture fattening are major ones in the study area. Form cattle fattening, oxen are mostly fattened by youths in the area in which they buy oxen with low cost and quality for a certain period before bringing them to the market after a quality improvement. Sell the fattened oxen in all local markets, in which some collectors bring their products for other bigger market traders, whereas some are sold in nearby markets for hotels. In line with fattening, dairy production is an emerging alternative economic activity for youths in the study area by focusing on hybrid cows. Buy a minimum of two to five improved female hybrid calves to sell milk and their offspring later. Especially, youths that organized themselves in the newly introduced dairy breeds are serving the people by providing high yield milk and milk products as compared to those youths who organized local dairy breeds.

Cattle fattening is practiced by buying the oxen and keeping them for at least three months by adjusting the selling time on their own. Although it is a good business for youth throughout the study area, the problem here is the lack of market linkage. Lack of common grazing and keeping land is another constraint for the youths grouped in cattle fattening since the government bodies only support them by providing credit only. As a result, this activity was mostly done by taking credit in a group and keeping the fattening animals individually, which is too difficult for the management of the group. This type of business management leads to failures in rerunning of the business together in the shelter of groups' and thereby fails in the promotion of large businesses. Youths as an alternative means of job creation enterprises. Poultry is another enterprise in which a higher percentage of youths are engaged in the study area. Since it is the simplest and easiest business that generates income in a short period, it is highly preferred by youths compared to other agricultural enterprises.

Under crop production, cereal production like teff, sorghum, and maize are part of the business opportunity on which some youths are organized in the study areas. Problem here is the climate change effect like lack of rainfall on time that leads to delay of cropping season and yield reduction. In addition, the disease is also the other problem in the study group youths in crop enterprises. Finally, vegetable products like potatoes, onions, and tomatoes are also produced in the study area especially

during the winter season by application of small irrigation. It covers about 21 percent of the total enterprises from the agricultural enterprises done by youths.

Table 1: Hypothesized variables used for econometric analysis and their expected sign.

Variables	Type	Measurement	Sign
Sex	Dummy	1 } male, 0 } female	
Education level	Continuous	Level of grades achieved	-
Marital status	Dummy	1 } married, 0 } otherwise	+±
Experience in agricultural activities	Continuous	Years in agricultural activities	+
Extension services	Continuous	Frequency of extension contact	+
Family income level	Continuous	Family income level in birr	+
Lack of initial capital	Dummy	1 } yes, 0 } no	-
Credit getting bureaucracy	Dummy	1 } yes, 0 } no	-
Fear of being in a group	Dummy	1 } yes, 0 } no	-
Fear of risk and uncertainty	Dummy	1 } yes, 0 } no	-
Working place (land) availability	Dummy	1 } yes, 0 } no	+

Table 2: Sampled respondents' characteristics.

Variables	Responses	Frequency	Percentage
Sex	Male	143	89.38
	Female	17	10.63
Age	15-20	5	3.125
	21-25	7	4.375
	26-30	50	31.25
	31-35	68	42.5
	Above 35	30	18.75
Education level	Read and write	1	0.625
	1-8 complete	70	43.75
	9-12	67	41.875
	Diploma	20	12.5
Marital status	University graduate	2	1.25
	Single	51	31.88
	Married	108	67.50
	Divorced	1	0.63

Source: own survey 2021.

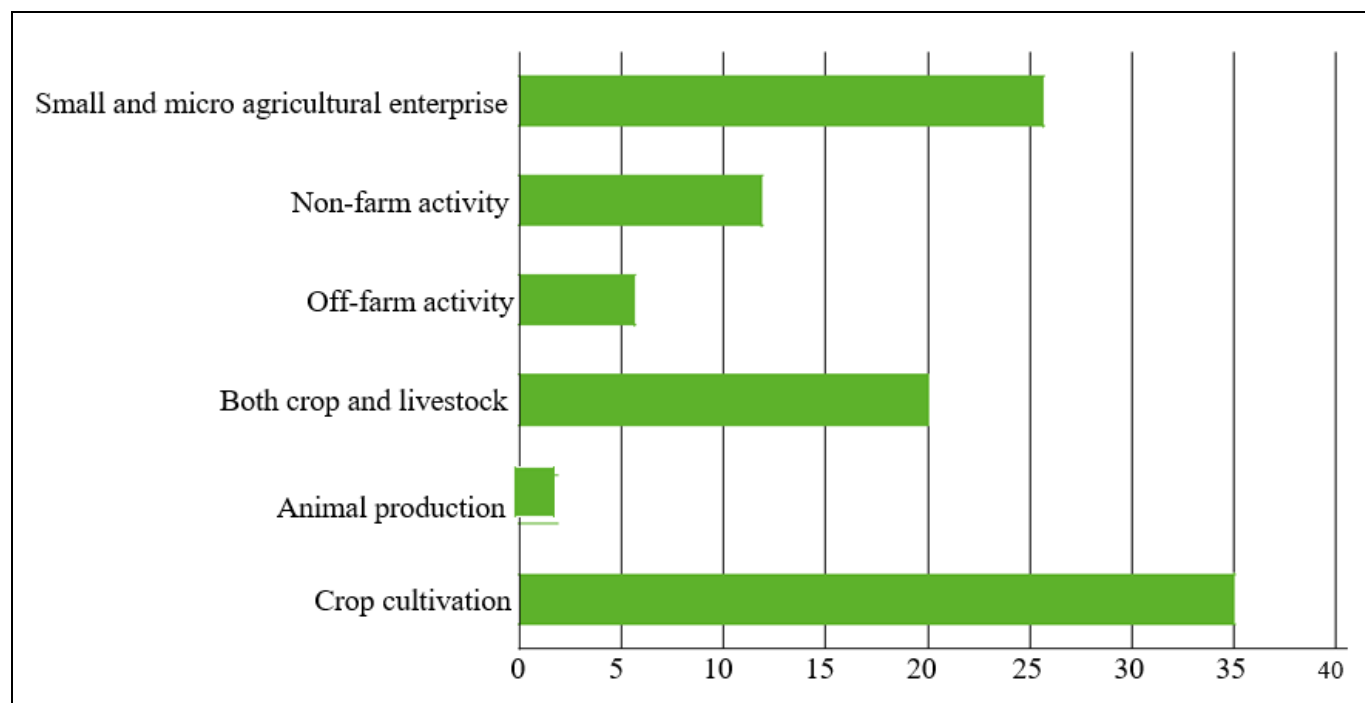


Fig 1: Livelihood sources (percent).

Constraints for Rural Youth Participation in Agricultural Enterprises

Before proceeding with the factors affecting youth participation, it is better to discuss the participation level of youth organized in agricultural enterprises in the study area. According to the survey results in Figure 3 of the sampled youths, about 55% were organized in the agricultural enterprise as youth job creation works. From the organized 55% of the youths, almost 90 percent are male participants. Shows that female participation is very low in agricultural enterprises as rural job creation work. Generally, as compared to the sector's job creation untapped potential, the involvement of youth in agricultural enterprises is very low. May be due to the issue of not encouraging youth to participate in job opportunities related to the sector. Consequently, the causes for youths not being organized in an agricultural enterprise are summarized in Figure 4. Result shows that the seasonality of agricultural income, the prevalence of agriculture for risk, and its uncertainty are the top constraints for youths not to join agricultural enterprises. Lack of initial capital to receive credit, the problem of getting the right group members, and having the common consent of working together are also other essential factors that affect the participation of youth. In-effectiveness of previously organized enterprises, fear of high-interest rates, and wrong perception of youth by considering agriculture as a low profession work were also other challenges.

Even though youths are organizing themselves in agricultural microenterprises, there is also the problem of running organized enterprises. For instance, among the organized youths (55%), only about 59% were running their business enterprises. remaining 41% did not start their organized enterprise. Why youths are not running their enterprise after organizing

themselves was among the asked questions for them, and they have also answered them accordingly (Figure 5). Given that, the group disagreement is the main reason for not running the enterprise that youths have organized. During grouping themselves, they come together with the same goal and after getting credit, the grouped youth changed their idea by requesting to divide the credit individually. Focus group discussions also confirm that, after getting the credit, some of the grouped youths decide to divide the credit individually. Implies that grouping youths is only for the sake of counting organized groups without formal follow-up. Due to the absence of formal monitoring, the grouped youths are not running the planned enterprise since they divided credit received at an early stage. With these divided pieces of money, which is too small and not enough to do any planned activity, the grouped business is not effective in teaching others in future. Insufficient amounts further go to purchasing clothes and other temporary materials and facing difficulties in repaying the revolving funds. Credit getting terms and expensiveness of the inputs are also other challenging factors for youth for not running organized enterprises. Youths planned to start their grouped enterprise at one time, the challenge here is that the provided credit is not enough to run. After getting the first term of credit, youths start to construct the house only, or they divided the credit individually until they get the second term of credit. second term credit provision is also after the grouped youths had constructed stating shed house only or even after the division of credit individual in some cases. Problem here is the amount of credit, the terms of receiving credit, and the type of enterprise youths are engaged in not matched. As a result, the organized groups are not functioning effectively due to the delay in providing credit that is not based on the youth business plan.

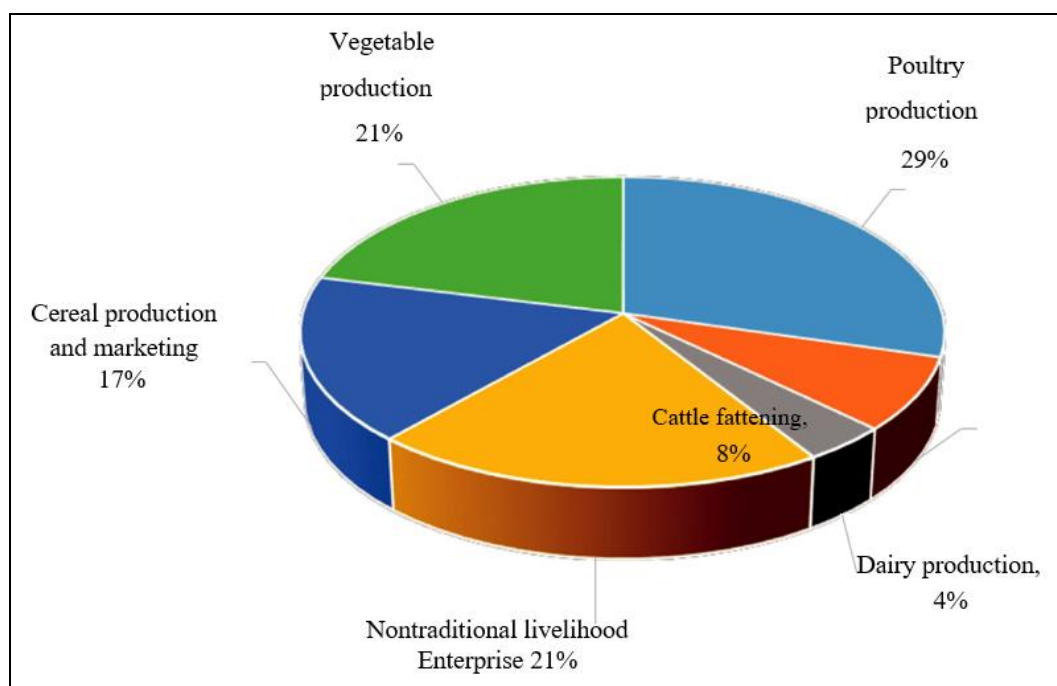


Fig 2: Types of agricultural enterprises. Livelihood and non traditional livelihood activities

Determinants of Youth Participation in the Agricultural Enterprise

Results of the coefficients, standard errors, significance level, marginal effects, LR Chi-Square, and Pseudo-R-square from the empirical estimation of the probit model are presented in Table 3. result of probit re-gression shows that the log-likelihood ratio (LR, chi2) is significant at 1%, meaning that independent

variables included in the probit model jointly explain the likelihood of youth participation in the agricultural enterprise. Among the hypothesized variables, education level, extension contact, credit getting bureaucracy, lack of initial capital, fear of being in a group, and lack of working place were significantly determined variables.

Extension services on youth job creation have a significant and

positive influence on youth participation in micro- and small agricultural enterprises at a 5% probability level (Table 3). Positive coefficient of extension serves implies that extension contact encourages youth participation in micro- and small agricultural enterprises. Marginal effect of the model result implies that, for one unit increase of extension, contact will increase the likelihood of youth participation in agriculture enterprises by 11.0%, keeping other factors constant. A study by Joseph *et al.* [18] found a similar finding confirming that extension services for youth would increase the probability of youth engagement in agribusiness in Vietnam and Zambia. Availability of land as a working place was also found significant at a 1% probability level with a marginal effect of 0.323 (Table 3). Model result indicates that the probability of youth participation in agricultural enterprises increases by 32.3% for those youths who have a working place (land available) as compared to those youths without a working place. Means that youths, for whom land is made available, have a higher probability of participating in the micro- and small agricultural enterprise than their counterparts. Finding is similar to the findings reported by Farayola *et al.* [28] and Lucy [29] that confirm that accessing land has a positive and significant impact on youth participation in agriculture.

Table 3: Determinants of youth participation in agricultural enterprise

Participation	Coefficients	SE	Sig.	dy/dx
Experience in agricultural	0.473	0.381	0.221	-0.033
Activities				
Sex	-0.549	0.494	0.110	-0.062
Marital status	0.243	0.417	0.561	0.017
Education level	-0.925	0.078	0.001	-0.184
Extension services	0.565***	0.276	0.030	0.110
Family income level	0.929**	0.631	0.141	0.175
Lack of initial capital	-1.932	0.596	0.001	-0.357
Credit getting bureaucracy	-1.347***	0.318	0.001	-0.258
Fear of being in group	-3.161***	0.645	0.000	-0.613
Fear of risk and uncertainty	-0.284***	0.561	0.613	-0.055
Working place (land) availability	1.658***	0.605	0.006	0.323
Constant	1.435	0.103	0.134	
5%, and 1%, respectively.	**	***	level significance at 10%,	
Source: model output 2021. Note:				

Credit getting bureaucracy was another variable that was found to have a significant and negative effect on youth participation at a 1% probability level with a marginal effect of 0.258. Negative coefficient of credit getting bureau-cracy implies that getting credit bureaucracy adversely affects the youth participation in micro- and small agricultural enterprises in the study area. With its marginal effect, it shows that credit getting bureaucracy will decrease the probability of youth participation in micro- and small agricultural enterprises by 25.8%, keeping other variables constant. May be due to the fact that most of the time credit getting for youths in the study area depends on the keen relation of the credit providers and their families. As a result, the youth groups who have a keen relationship with those credit-giving organizations get credit easily without any bu-reaucracy compared to other counterparts. A study by Adella *et al.* [30] in Tanzania also approves that youths who have no access to credit are less likely to be involved in horticulture agribusiness as compared to youths with credit access.

It was also found that fear of being in a group has a negative effect on youth participation at a 1% significance level with a marginal effect of 0.613. Negative sign for fear of being in a group implies that being in a group reduces the probability of youth participation in micro- and small agricultural enterprises. With its marginal effect, it indicates that, for those who do not fear being a group, the probability of their participation in micro- and small agricultural enterprises will increase by 61.3% to their counterparts, keeping other variables constant. Means that youths who did not fear being in a group to participate in agricultural enterprises have a higher probability of participating in agricultural enterprises. Research findings by Akpan *et al.* [31], Ng'atigwa *et al.* [32], and Mmbengwa *et al.* [33] found a similar result to the current study.

Education level of youths and lack of initial capital are also other negatively and significantly influencing variables. For instance, as education increases by 1 grade (level), the probability of youth participation in an agriculture enterprise decreases by 18%, holding other factors constant, while compared to those youths who have access to initial capital, the probability of youth participation in an agri-culture enterprise decreases by 36% for those youth who lacked initial capital, holding other factors constant. A study by Etim *et al.* [22] found similar results in Nigeria. However, studies by Martinson *et al.* [34] from Ghana and Gitore *et al.* [15] from Ethiopia found unlike results that indicated that the likelihood of youth participation in agriculture enter-prises increased as the education level increased.

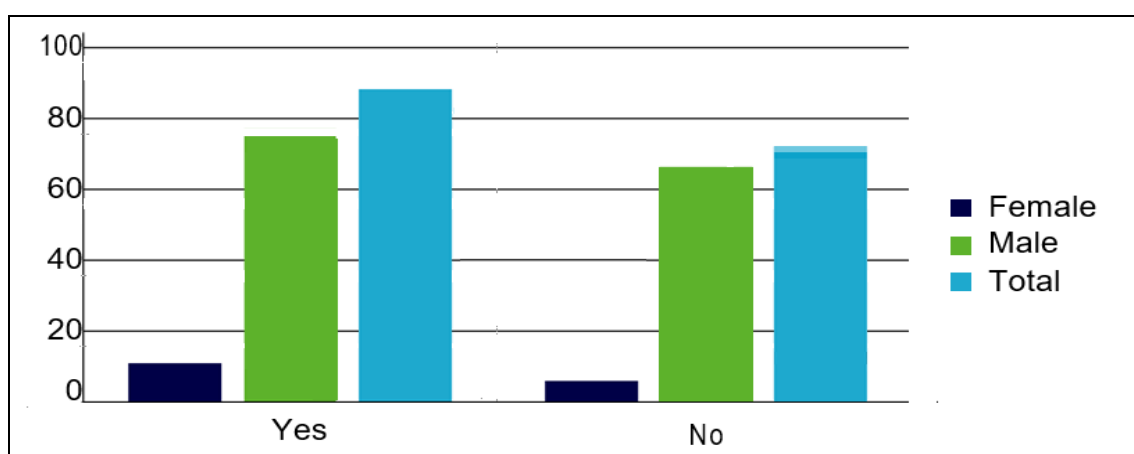


Fig 3: Youth participation.

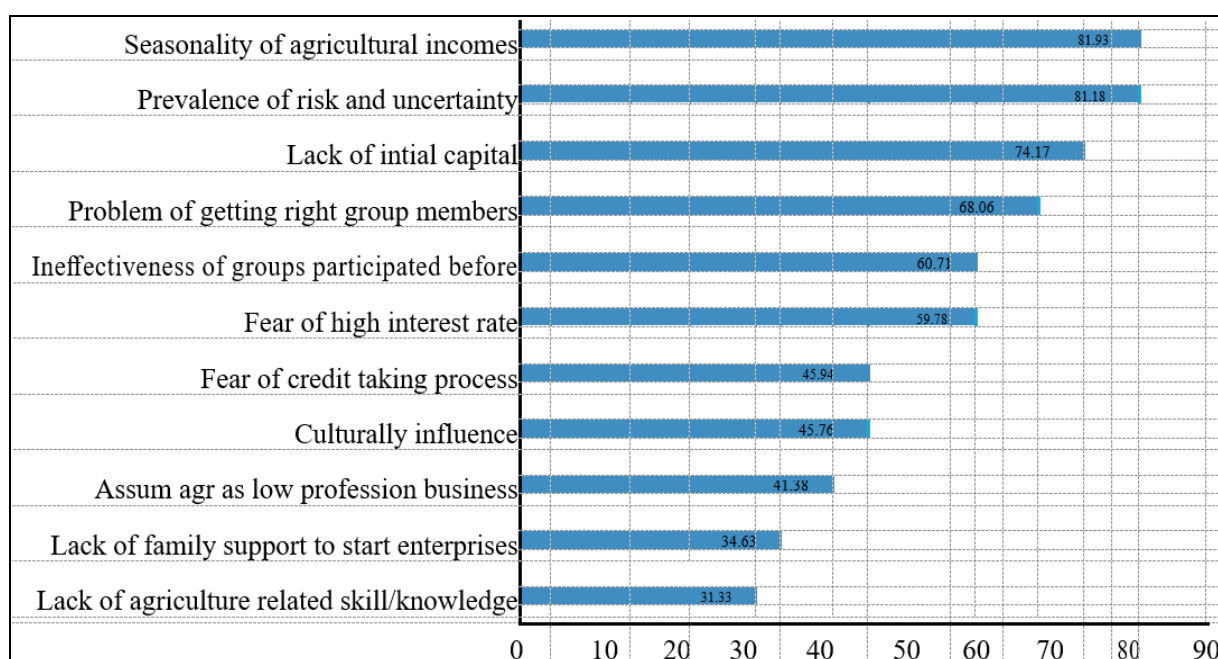


Fig 4: Factors affecting youth participation.

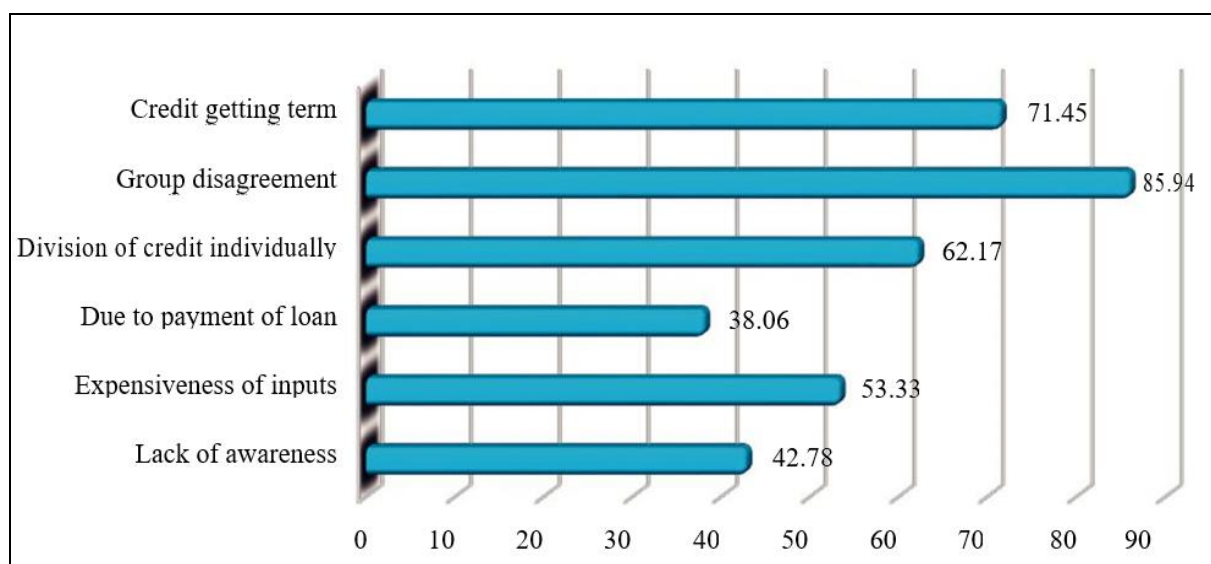


Fig 5: Reasons for not running the grouped enterprises.

Conclusions and Recommendations

Among the agricultural enterprises, livestock enterprises were preferred by the majority of the youths (63.3%), indicating that the livestock sector has a huge capacity for job creation in Ethiopia. Seasonality of agricultural income, fear of risk and uncertainty of agriculture, lack of initial capital, the problem of the minimum recommended group members, and ineffectiveness of previously grouped enterprises are the leading barriers affecting youth participation in an agricultural enterprise. While youths group themselves into agricultural enterprises, group disagreement, credit getting terms, division of credit individually are the identified top three reasons for not running the enterprises. From the econometric results, this study concludes that education level, extension, contact, credit getting, bureaucracy, lack of initial capital, fear of being group and risk and uncertainty, and lack of working place (land) are significant determinants of youth participation. In conclusion, institutional related problems are the main factors affecting the rural youth job creation works in Ethiopia. policy issues must revisit the

rural job creation strategies from the point of view of its implementation focusing on the interest of youths by doing monitoring and evaluation work on the organized enterprise. Grouping youths based on their preferred interest and evaluating their business plan critical from group and nature of enterprises perspectives before credit disbursement are suggested. Solving the problems of credit providing terms on the microfinance side and the introduction of agricultural insurance for fear of agricultural risk through the grouped youths' agricultural enterprises are recommended. Overall, to increase youth participation in an agricultural enterprise, special policy adjustments based on the nature of the enterprise are needed for initial saving, interest rate, and payback period credit.

Data Availability

Data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

Authors declare that they have no conflicts of interest with issues related to this manuscript.

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