DETERMINANTS OF YOUTH LABOR FORCE PARTICIPATION IN AGRICULTURAL SECTOR: EVIDENCE FROM BUTTALA DIVISIONAL SECRETARY'S DIVISION IN SRI LANKA

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Abstract

United Nations defines "Youth" as a period of transition from the dependence of childhood to adulthood's independence and awareness of interdependence as members of a community. Youth participation in agriculture is very important to make a sustainable contribution to national development as well as living standard of the rural community. This study aims to examine factors affecting the youth labor force participation in agricultural sector in Buttala DS division, Sri Lanka. Field survey was conducted from February to March in 2023 to collect the relevant data from 150 youth farmers selected randomly who were belong to the age group between 15 – 29 in the study area. To explore the socio – economic and farming characteristics of the youth labor participation in agriculture sector, frequency analysis was applied in the study. Among the total respondents, the involvement of males and females in the agriculture sector are 64.7% and 35.3% respectively. Tobit regression model and its marginal effects were used to identify the factors influencing youth involvement in the agriculture sector and its results revealed that education level, access to off-farm income, access to credit, land ownership and land size have significantly influenced the youth labor participation in the agriculture sector in the study. Among these factors, access of off-farm income, land ownership and size of land were significant influenced the youth involvement at 1% level while the level of education, and access to credit influenced the youth involvement at 5% significant level. As revealed by the findings there are several recommendations have been made to attract youth for farming such as provide the chances for earning off – farm income, improving the credit access facilities, and ensure the land ownership of them. Thus, these types of strategies motivate the young generation to actively participate in the agriculture sector in the future.

Keywords: agricultural sector, socio – economic and farming characteristics, youth labour force participation, Tobit regression model.

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1. Introduction

Economy of Sri Lanka is largely based on agriculture, with tea, rubber, and coconut being major export crops. In recent years, the country has made strides towards economic development, with a growing tourism industry, increased foreign investment, and the development of its technology and service sectors. (Asian Development Bank, 2017) However, Sri Lanka still faces challenges such as income inequality, high levels of government debt, and a trade deficit. Despite these challenges, the country has potential for continued economic growth and development. Agriculture has played a main source of employment since independence in Sri Lanka. Currently, 26.5 % of the total population has been employed in agriculture and agriculture-related activities for their livelihoods, contributing 7.5 percent to GDP by 2022(Central Bank Report, 2022). Youth labor is a critical issue in Sri Lanka, with a high rate of youth unemployment and underemployment. A decline in the attraction and retention of youth in domestic agriculture is not limited to paddy farming nor Sri Lanka which is rather a global phenomenon particularly in our region during the recent past due to myriad of reasons. However, this trend is alarming as an overwhelming majority of Sri Lankan farmers are over 50, with only 8.5% being between the ages of 18 and 35. (Department of Census and Statistics, 2020). Further, in the current context of crisis, Sri Lanka, being predominantly an agriculture-based economy, the contributions of youth in agriculture particularly in paddy farming which produce the country's staple food is of crucial importance. The youth unemployment rate in Sri Lanka saw no significant changes in 2023 in comparison to the previous year 2022 and remained at around 25.28 percent. However, 2023 marked the second consecutive increase of the youth unemployment rate. The youth unemployment rate refers to the share of the economically active population aged 15 to 24 currently without work but in search of employment. The youth unemployment rate does not include economically inactive persons such as the long-term unemployed or full-time students.

Sri Lanka has a significant youth population (aged 15-29), accounting for nearly 25% of the total population Samaraweera, G. (2022). Since great majority of youth live in rural areas, youth unemployment is a rural phenomenon in Sri Lanka. There are number of factors associated with high rate of youth unemployment in Sri Lanka such as education and skills mismatch and queuing for an opportunity to find a "good job" in the public sector. (Ibargüen, 2004).

In this background, this study tries to identify the factors that influencing the youth involvement in agricultural sector in Buttala DS division in Sri Lanka. By identifying the factors that affect youth participation in agriculture, help for policymakers to develop appropriate policies to address the challenges that hinder the youth engagement in the sector. Moreover, promoting youth participation in agriculture can lead to increased productivity, which can contribute to the overall economic growth of the country. Additionally, engaging youth in agriculture can also help to address the issues of youth unemployment and underemployment, as well as reduce poverty and inequality in rural areas. Furthermore, understanding the determinants of youth

labor participation in the agricultural sector can also help in addressing gender disparities in the sector. Women, in particular, face significant barriers to participation in agriculture, and identifying these barriers can help in developing targeted policies to promote gender equality in the sector.

Overall, finding the determinants of youth labor participation in the agricultural sector in Sri Lanka is important for sustainable economic development, poverty reduction, and gender equality.

Objective of the research

Objective of this study is to identify the factors affecting the youth labor participation in agricultural sector in Buttala DS division.

2. Empirical Review

The definition of youth varies among different organizations and theories. The United Nations (UN) defines youth as individuals aged between 15 and 24 years old (United Nations, n.d.), while the World Health Organization (WHO) classifies youth as those between the ages of 10 and 24 years old, encompassing both adolescents (10-19 years old) and young adults (20-24 years old) (World Health Organization). In the European Union (EU), youth generally refer to individuals between the ages of 15 and 29 (European Commission). Factors affecting less youth participation in smallholder agriculture in Sri Lanka was analyzed by Nadeeka Damayanthi & Rambodagedara(2013) and they found that youth participation in smallholder agriculture is significantly associated with the factors age, marital status, availability and accessibility of highlands, paddy lands, extension services, market facilities and higher education.

Adesina, & Favour (2016) analyzed the determinants of participation in youth-in agriculture program in Ondo State, Nigeria, and their results revealed that inadequate training facilities, household size, farm size, years of farming experience, attitude were the main constraints in the involvement in agricultural sector. Obisesan, & Adekemi (2019) investigated the determinants of youth participation and labour demand in Nigerian agriculture using the 2015/16 and they found that youth participation in Nigerian agriculture is significantly influenced by farm size, access to credit and household size. Age, use of inorganic fertilizer, farm income, household size and cultivated farm size were labour enhancing. Ahaibwe, et al. (2019) done a research on youth engagement in agriculture in Uganda and they found that the youth are less likely to access credit, extension services and social capital are the key factors in agricultural transformation.

Another study done by Jayasinghe, & Niranjala (2021) to identify the factors affecting youth participation in Agriculture in Galenbidunuwewa divisional secretariat division, Anuradhapura, Sri Lanka. The results of the study showed that

water availability and experience significantly influenced the factors that affect youth participation in agricultural activities. Lukwago Moses Mwesige et al. (2024) analyzed the determinants of youths' participation in Agricultural cooperatives in Uganda and their results revealed that, size of land owned and membership fees, institutional factors, marketing, household size, hired land, land cultivated, shared responsibility and secondary occupation were authenticated as crucial for participation.

Nemanzemba, E.N., Maziya, M, & Mathaulula, M.A, (2025) analyzed the factors influencing youth participation in agriculture in Thulamela local municipality, Limpopo province, South Africa. The findings of their study indicate that family influence, personal interest, access to technology, and agricultural education significantly affect youth involvement in agriculture.

3. Methods and Materials

This study examined the factors that influence the youth participation in agricultural activities in Buttala DS division. For this purpose, the data were collected from a survey on a sample of youth labors who participated in agricultural sector Monaragala District during in 2023. Self-administered questionnaires were used to collect information from the youth farmers in the Buttala DS divisions. The questionnaire was designed to encompass three main sections such as, demographic information and farming information and they were distributed to the 150 youth labors who are participated in agricultural sector in Buttala DS divisions. A multistage random sampling procedure was used to select youth labors in Buttala division, because of their proven strength and popularity in agricultural production. In the first stage, Buttala DS division was selected purposely and then among the 5 villages of Buttala DS Divisions, only three villages namely, Waguruwela, Koonketiya & Gonaganara were randomly selected in the second stage. Finally, a random sample of 50 youth labors was drawn from each division with the total of 150 respondents in the study.

Conceptual Framework

The framework guiding this study includes factors influencing youth involvement in the agriculture sector (Figure 1). The elements are categorized into three groups. The independent variables include economic factors, social factors, and infrastructure facilities. Youth involvement in agribusiness is the dependent variable. The conceptual framework was used to generation and analysis of data.

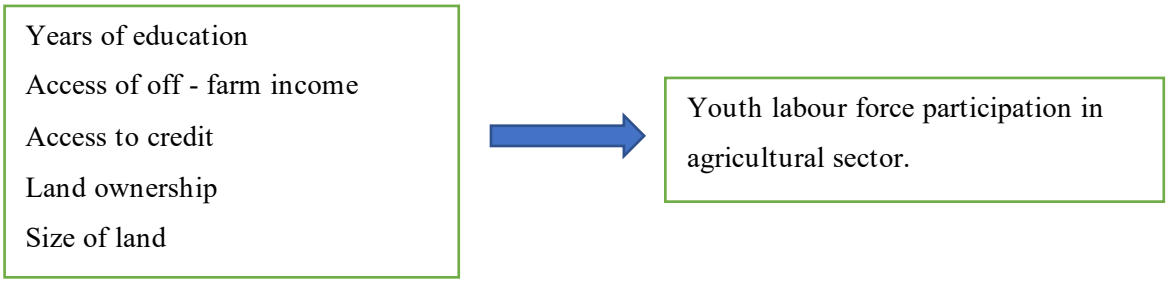

Figure 1: Conceptual Framework

Table 1 illustrates the detail about the specific variables focusing on the socio – economic and farming characteristics and explain how they were measured and operationalized in the study.

Table 1: Definition of the variables used in the study

Variables	Description
Youth labor force in agriculture sector	Number of youth labor working in agriculture sector/Number of total youth labor in a family
Gender	Gender of the farmer coded as 1 for male, 0 for female
Age	Age of youth labor between (15-29) in years.
Education level	Coded as 1 for primary 0 for others
Civil status	1 for married and 0 for single
Family size	Total number of family members
Income	Monthly income in rupees
Off - farm income	Coded as 1 for yes and 0 for no
Credit	Ability to access credit from a third party coded as 1 for yes and 0 for no
Distance	Distance from the farming area to the nearest market in Kilometers.
Experience	Number of years in farming experience
Land ownership	Coded as 1 for own land and 0 for tenant
Land size	Size of cultivated land in acre

Union membership	Membership of the farmer's union coded as 1 for yes and 0 for no

Methods of Data Analysis

The collected data were analyzed using frequency, descriptive statistics, Tobit regression model and marginal effects in the study. Descriptive statistics was used to summarize the socio – economic characteristics of the respondents and farming characteristics used in the study.

Tobit regression model

Tobit model was used to analyze the factors that affect the participation of a youth in agricultural activity in the rural sector. The model is appropriate in this study since the dependent variable is the ratio of participation where the number of youths involved in agricultural sector out of total youths in the family. Thus, the dependent variable is between 0 and 1 where 0 is none of them are participant and 1 means all youths are participated out of their total members in the family. The Tobit model allows for the estimation of linear relationships between variables when there is either left- or right-censoring in the dependent variable.

The determinants of youth participation in agriculture are assessed using the following Tobit regression model:

$Y_I = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$

Where, Y_I is the ratio of youth involvement

β_0 is constant and β_1, β_2, β_3 , β_4 and β_5 are the coefficients of each independent variable.

X_1 = Years of education

X_2 = Access of off - farm income

X_3 = Access to credit

X_4 = Land ownership

X_5 = Sze of land

4. Results and Discussions

Table 2 shows the results derived from the frequency analysis of the selected variables related to demographic and farming characters were examined and its results are given below.

Table 2: Results of Frequency Analysis

Variables	Frequency	Percent
Gender		
Male	97	64.7
Female	53	35.3
Civil status		
Married	87	58
Single	63	42
Member of the union		
Yes	95	63.3
No	55	36.7
Access of off- farm income	106	70.7
Yes	44	29.3
No		
Credit accessibility		
Yes	86	57.3
No	64	42.7
Land ownership		
Own	124	82.7
Tenant	26	17.3

Source: Estimated by author using SPSS (2023)

Out of the 150 youths, 97 (64.7%) are males, and 53 (35.3%) are females which indicates that there is a higher proportion of male youth in Buttala division compared to females. Of the total sample, 87 (58%) of them are married, while 63 (42%) are single.

In case of membership in the union suggested that 63.3% of the youths are members of a union, while 36.7% of them are not. This suggests that a significant proportion of youth laborers in the agricultural sector are union members. Frequency of access to off-farm income represents that, approximately 70.7% of the youth laborers have access to off-farm income, while 29.3% of them do not have it.

Out of the total sample, 57.3% of them have access to credit, whereas 42.7% of them do not have those credit facilities. A substantial proportion of the youth laborers have own land, while a smaller proportion of them have tenant land. These findings

provide an overview of the characteristics and circumstances of the youth labor force in the agricultural sector in Buttala division.

Results of Tobit regression model

To identify the factors influencing the labour force participation in agricultural sector, Tobit regression model was applied and its results shown in the table below.

Table 3: Estimated results of Tobit regression model

Variables	Coefficients	Standard error	t - value	P > t
Years of education	.0980	.0479	2.05	.042
Access of off - farm income	.1358	.0513	2.64	.009
Access to credit	.1224	.0479	2.55	.012
Land ownership	.1640	.0590	2.79	.006
Size of land	.0144	.0050	2.83	.005

Source: Estimated by author using STATA (2023)

As depicts in Table 3, access of off – farm income, land ownership and size of land are statistically significant with a 99 percent confidence level. Years of education, access to credit also significantly impact on the youth participation in agriculture at 95 percent significant level. The coefficient of education has positive and significance at 5% level implies that, the persons who have primary educational qualification there are more likely to involve in agriculture sector than other educated persons. This finding is inconsistence with the findings of the study done by Jayasinghe, P.W.G.S.L., & Niranjala, S.A.U. (2021).

Access of off – farm income has positively impact on youth labor force participation indicates that, the respondents who have other income, they are more probability to engage in agricultural sector than the respondents who don't have other income sources. Since when they earn other income which may help them to invest in agricultural sector and thus they will be motivated to involve in the sector. The coefficient of access to credit has positive sign implies that, the respondent who has credit facilities they are more likely to engage in agricultural activities than their counterparts in the study. This may happen due to the credit is one of the financial sources to motivate them in the involvement of youth participation in the agriculture.

The coefficient of land ownership has positively impact on youth labor force participation indicates that, the respondents who have own land, they are more probability to engage in agricultural sector than the respondents who have tenant lands. Since when they have own land which may help them to participate in agricultural sector. The coefficient of land size has positive sign in the Tobit model implies that, an additional increase in land for youths increases the probability of participating in the agriculture. Thus, the youth labors who have relatively larger size

of lands, they are more likely to engage in agricultural sector than the youth who have lees size of land.

After estimated the Coefficients of each explanatory variable in Tobit regression model, marginal effects also measured and the results were depicted in Table 4.

Table 4: Results of marginal effects after Tobit

Variables	dy/dx	Standard error	Z	P>Z
Educational level	.0252	.0133	1.89	0.059
Available of off - farm income	0349	.0135	2.58	0.010
Access of credit	.0315	.0129	2.44	0.015
Land ownership	.0422	.0164	2.56	0.010
Size of land	.0144	.0050	2.83	0.005

Source: Estimated by author using STATA (2023)

According to the above results, the marginal effect of education has positive sign implies that, the respondents who have primary educated, they are 2.52% of more probability to engage in agricultural activities than the respondents who have other educational levels in the study. Since they have the basic educational background, they are unable to find other jobs and thus they were motivated to engage in agriculture than the respondents who have more than primary educational knowledge and skills.

Marginal effect for availability of off- farm income has 0.034 illustrates that, the respondents who have other income sources, they are 3.4 percent of more likely to involve in agricultural activities than others who don't have such off-farm income sources. Thus, other income sources are one of the factors to motivate the youth involvement in agricultural activities. The marginal effect of access of credit has 0.0315 illustrates that, the respondents who have credit facilities they are 3.15percent of more likely to involve in agricultural activities than others who don't have credit facilities in the study. The marginal effect of Land ownership has positive sign of 0.042 implies that, the respondents who have own land, they are 4.22 percent of more probability to engage in agricultural activities than the tenant land respondents in the study. The marginal effect of land size after Tobit model is 0.014 and statistically significant at 1 percent levels implies that land size positively influenced youth participation in agriculture. This indicates that, an additional increase in land for youths increases the probability of participating by 1.4 percent in the study.

5. Limitations and Future Research

Data were collected across five villages within the same administrative region, which may limit the generalizability of the findings to other areas. Only for 150 youth labors were taken as a sample which may limit the general findings of the study. Future research should broaden the sample to include a more diverse range of

young agricultural practitioners across Sri Lanka. There are number of variables influencing the youth labour force participation in agricultural sector. But, this study considered only few variables such as socio -economic and farming characteristic only. Future research should consider other factors to determine the youth labour force participation in agricultural sector in other districts of Sri Lanka.

6. Conclusion

Based on the statistical results from the study, it can be concluded that 64.7% of the respondents are males, and 35.3% of them are females in the study area. The Tobit regression results showed that years of education, availability of off – farm income, access to credit, land ownership whether they have own land or tenant and size of land were significantly and positively affect the affect youth participation in agricultural activities. Results of marginal effects revealed that, the respondents who studied up to primary education, they have 2.52% of more probability to engage in agricultural activities than other respondents who studied more than primary. The respondents who have other income sources, their probability to engage in agriculture also will be higher by 3.4 percent and the probability of involvement in agriculture sector for youth will be higher by 3.15percent when they provide the credit facilities for the purpose of agriculture. The marginal effect of Land ownership has positive sign of 0.042 implies that, the respondents who have own land, they are 4.22 percent of more probability to engage in agricultural activities and the marginal effect of land size is 0.014 indicates that an additional increase in land for youths increases the probability of participating by 1.4 percent in the study. Thus, the above four factors should be considered as the important aspects when the government designing the strategies and policies to motivate the youths in agriculture. In addition to the statistical analysis, interview and discussion also conducted by the researcher with some selected respondents and according to that in order to develop agriculture activities among youths, a number of incentives programs such as training programs are needed to convince them to motivate them to engage in agriculture which can provide a good career among youths in the future.

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