

**Factors affecting youth Participation in
Agriculture in Galenbidunuwewa divisional
secretariat division, Anuradhapura, Sri Lanka**

P.W.G.S.L Jayasinghe^{1*}, *S.A.U. Niranjala*¹

* Correspondence: niranjala@ssh.rjt.ac.lk

¹ Department of
Economics, Faculty of
Social Sciences and
Humanities,
Rajarata University of
Sri Lanka

Abstract

This research aims to examine factors affecting youth participation such as gender, education level, marital status, family income, household size, land size, water availability, credit availability, and experiences. The Source of data used in this study is primary data based on the Galenbidunuwewa divisional secretariat division in Anuradhapura district, Sri Lanka. A total of 75 youth were purposively selected for the study to complete a survey. The binary logistic model was used to analyze the determinants of youth participation in agriculture. The results showed that water availability and experience significantly influenced the factors that affect youth participation in agricultural activities. The result of the binary regression coefficient indicates that the variable gender and marital status have a negative impact on participating youths in agriculture. In contrast, the variable education level, family income, household size, and credit availability do not affect youth participation.

Keywords: *binary logistic model, participation, youth.*

1. Background of the study

Agriculture has played a main source of employment since independence in Sri Lanka. Currently, 23.73 % of the total population has been employed in agriculture and agriculture-related activities for their livelihoods, contributing 8.36 percent to GDP by 2020 (Central Bank Report, 2020). Attracting youth and retaining them in the agriculture sector remains a global challenge (Mukembo et al., 2014). The United Nations defines youth as individuals in the age group ranging from 15 to 24 years (Filmer, 2014). Rural youth are young people that reside in rural areas embedded in the socio-cultural context (Assaad & Roudi-Fahimi, 2007; Leavy & Smith, 2010). They are heterogeneous in gender, age, personality, religion, ethnicity, education, family position, and social networks (Bennell, 2007; Sumberg et al., 2014).

According to Umesh et al. (2011) contribution of agriculture to farmers' income and rural development depends on the active participation of youth who are the potential labor force because of their innovative behavior, minimal risk aversion, less fear of failure, greater physical strength, and greater knowledge acquisition propensity. The youth unemployment rate is higher than that of adults in most countries (Keese et al., 2013). Agriculture holds considerable potential to provide gainful employment opportunities to youths if it is supported with increased investment and conducive legal and policy Frameworks (Koirala, 2014; Proctor & Lucchesi, 2012; Girard, 2016).

There is a need to support youth in identifying business opportunities in the agriculture sector, from producing food to providing storage, transport, processing, and marketing (Koira, 2014). Youth migration from rural to urban has become a common problem in the world. Most youths migrate to urban areas for better employment opportunities and income, and rural regions are affected by poverty and hunger. Moreover, rural people migrate to urban areas to solve poverty, hunger, and unemployment (Samardick et al., 2000; Woolard, 2013).

The youth's severe issues are lack of job opportunities, lack of education opportunities, deteriorating moral values, drugs, alcohol consumption, poverty, smoking, violence, and lack of mobility (Ibarguen, 2005). In 2020, the population aged 15-24 years for Sri Lanka was 3,160.21 thousand persons. Further, the unemployment rates for males and females are 21.1 and 36.3 percent, respectively, for the age group 15—24 (Labor Force Statistics, 2020). There has been a growing political commitment across Sri Lanka to engage youth in agribusiness. It is challenging to attract youth into agriculture as an occupation. Thus, this study aimed to identify factors that influence effective youth participation in agriculture as an occupation in Sri Lanka by considering the farmers in the Galenbindunuwewa DS area.

There is a widespread belief that youths play a vital role in agricultural and rural development (Ommani, 2006). Bountiful factors are contributing to youth's participation in farming. Twumasi et al. (2019) examined determinants of youths' participation in agricultural production in Ghana. The empirical result revealed that Youth perception of farm input price, youth level of education, access to credit, access land and youth course of study at the tertiary institution, gender composition of the youth, and youth perception of farm income significantly affect engagement in farming. Janeth et al., (2019) research on socio-economic factors influencing participation in agriculture showed that age, education level of the respondent, cost of technology, and land acreage were significant in participation in the youth in agriculture. In addition, household size, farm size, years of farming experience, attitude have been identified as significant factors of involvement in agriculture by youths (Adesina and Favour, 2016). Although these studies highlight that socio-economic factors influence youth participation in agriculture, those may not be related to all countries and all areas in a country. Therefore, this study examines the socio-economic factors that influence youth participation in agriculture in Sri Lanka.

2. Research Methodology

This study examined the factors that influence youth participation in agriculture activities. The sample for the analysis consisted of 75 youths who were purposively selected. A structured questionnaire was used to collect data from respondents.

2.1. Study area

Galenbindunuwewa divisional secretariat division is located in the Anuradhapura district. Galenbindunuwewa divisional secretariat division lies in the extent of 292.489 km² with 41 Grama Niladari divisions (Census codes of Administrative

Units, North Central Province Sri Lanka), and Huruluwewa is the main irrigation source of this area

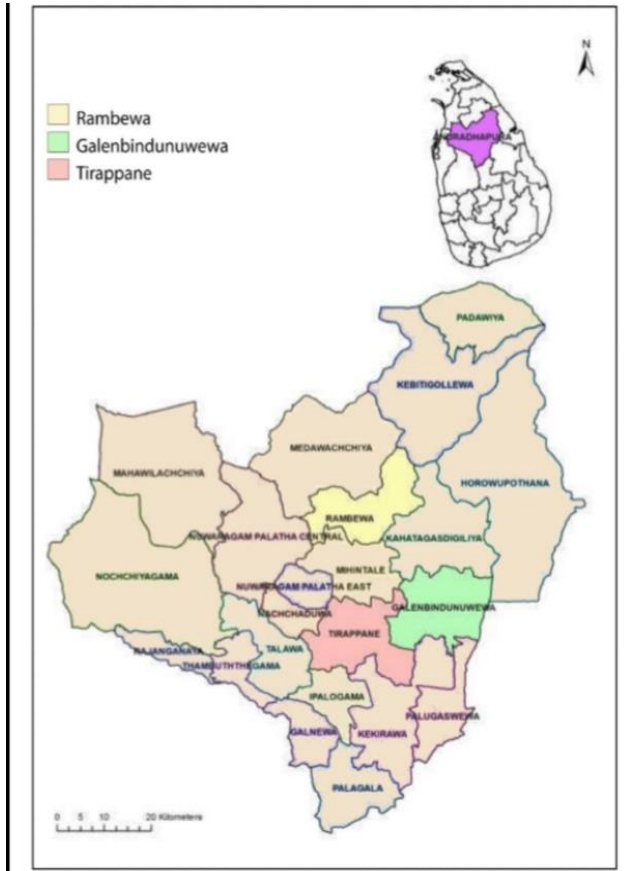


Figure 1. Map of Galenbidunuwewa showing the study location

2.2. 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.

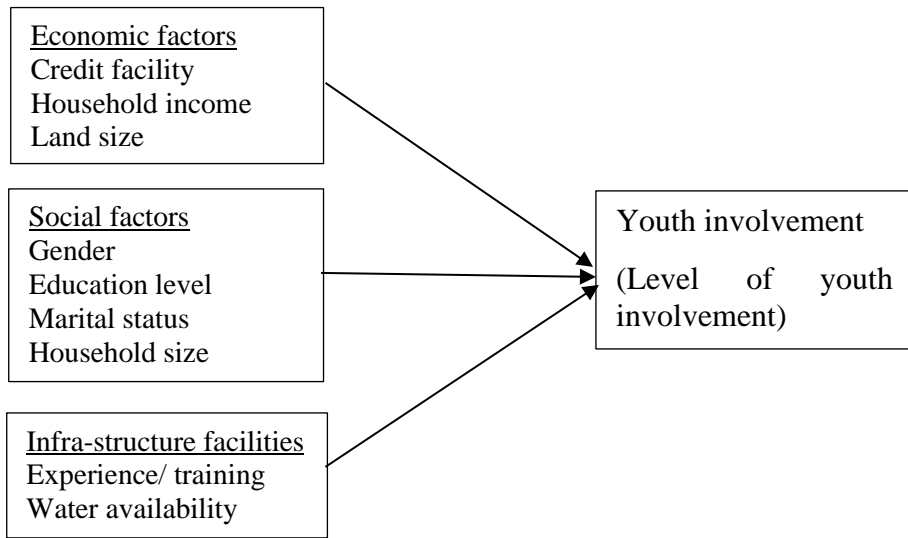


Figure 2: The conceptual framework of the factors influencing agriculture participation.

Table 1: Explanatory variables and description

Independent/Explanatory Variable	Variable description	Measurement Type
The education level of consumers	The level of education of the respondent (number of schooling years)	Continuous
Marital status of consumers	Marital status of the respondent (1= Married, 0= Single)	Categorical (Dummy)
Gender	The gender of respondent (1= male, 0 = female)	Categorical (Dummy)
Monthly Income	Monthly income of respondent (Rupees)	Continuous
Number of households	Number of households in the family (number of members)	Continuous
Land size	Land size of the respondent (Acres)	Continuous
Credit facility	Access to credit (1= yes,0= no)	Categorical (dummy)
Water facility	Water availability for cultivation (1= enough facility, 0 = not enough facility)	Categorical (dummy)
Experience/training	Level of experience (1= yes, 0= no)	Categorical (dummy)

The logistic regression model was used at a 0.05 level of significance to analyze agriculture participation factors. The logistic regression model is a qualitative choice model to explain the relationship between a dependent discrete variable and explanatory variables (Polson & Spencer, 1991). The logistic model for the binary variables, which assumes that the dependent variable is binary, was used for this analysis. The model consists of a dichotomous outcome variable and nine independent variables (five dummy and four continuous variables).

The binary logistic regression model was specified as follows

$$Y = Ln\left(\frac{P}{1-P}\right)$$

$$Ln\left(\frac{P}{1-P}\right) = b_0 + b_1X_1 + b_2X_2 + \dots + b_{11}X_{11} + e$$

Where,

Y = Dependent binary variables (Participate=1, non-participate =0)

P = Probability of participating in agriculture

Ln= Natural Logarithm factor

b_0 = Constant

$b_1 - b_{11}$ = Regression coefficients

$X_1 - X_{11}$ = Explanatory variables

e = Stochastic error term

$\left(\frac{P}{1-P}\right)$ = Odd ratio (odds in favor of participation)

3. Results and Discussion

Table 1 presents the summary of the participation statistics of youths in the study area. The survey results showed that most respondents (56%) were not participating in agriculture activities, and the majority were female (71%).

Table 2: Participation of youths in agriculture

	Participating		Not participating	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Male	17	52	12	29
Female	16	48	30	71
Total	33	100	42	100

Source: Survey data 2019

Table 3: Factors influencing youth participation

Explanatory variables	Logistic coefficient	S.E.	Wald	df	Sig.	Exp(β)
X₁ = Gender	-1.819	.912	3.980	1	.046**	.162
X₂ =Education level	0.315	.372	.717	1	.397	1.370
X₃ =Marital status	-2.600	.891	8.520	1	.004***	.074
X₄ =Family income	0.000	.000	2.170	1	.141	1.000
X₅ =Land size	0.722	.424	2.897	1	.089*	2.059
X₆ =Household size	-1.196	.324	.364	1	.546	.822
X₇ =Credit availability/ financial facilities	1.546	.946	2.671	1	.102	4.693
X₈ =Water availability	2.152	.887	5.882	1	.015**	8.603
X₉ = Experience / training	1.701	.803	4.487	1	.034**	5.479
Constant	-3.075	4.311	.509	1	.476	.046

***, **, * denotes statistically significant at 1%, 5% & 10% levels.

Source: Author calculation using SPSS (Version 10)

Table 3 shows the binary logistic regression result of this study. As depicts in table 3, gender, marital status, water availability, and experience are statistically significant with a 95 percent confidence level. Land size also significantly impact youth participation in agriculture but 90 percent significant level. Educational level, family income, household size, and credit availability are not statistically significant for youth participation in agriculture.

The marital status has a coefficient of -2.600, and the expected β value is 0.074; this implies that marital status negatively influences youth participation in agriculture, with an additional increase in the number of married youth decreasing the probability of participating by 260 percent. The expected probability of experiencing married youths in agriculture is high, and this research implies a negative sign. The majority of married female youths are doing agricultural-related activities in this area than male married youths.

The finding reveals that water availability increases the predicted probability of participating in agriculture by youths. From table 3, water availability has a coefficient of 2.152, the expected β value is 8.603. The result implies that water availability positively influenced the intensity of participating in agriculture, with additional water availability increase the probability of participating by about 215 percent. Moreover, youths' experience regarding agriculture activities has a 1.701 coefficient which indicates that an increase of training or experience for youths increased the probability of participating by about 170 percent.

The gender of youths also has a significant effect on participating in agriculture denotes coefficient is -1.819. There is a negative relationship between gender and youth participation in agriculture. It means that the increase in the number of male youths decreases the probability of participating by 182 percent. This finding is not an expected probability in agriculture for male youths.

The binary logistic coefficient of land size is 0.722 and statistically significant at 10 percent levels. This implies that land size positively influenced youth participation in agriculture. Suppose an additional increase in land for youths increases the probability of participating by 70 percent. Educational level, household size, family income, and credit availability do not significantly affect participation and should not be considered valuable while designing intervention strategies.

4. Conclusion and recommendations

Based on the statistical results from the study, it can be concluded that youth have a negative perception of agriculture, showing 56 percent of youths are not involved in agriculture activities. The findings from the survey highlighted that majority of female youth are not participating in the agriculture sector. The binary logistic model results showed that water availability and experience positively influenced the factors that affect youth participation in agricultural activities. The variable gender and marital status have a negative impact on participating youths in agriculture, while the variable education level, family income, household size, and credit availability have not to affect youth participation. Based on the research findings, it is recommended that in order to develop agriculture activities among youths, irrigation facilities should be developed. Furthermore, a number of incentives programs such as training programs are needed to convince youths that agriculture can provide a good career among youths.

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