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Determinants of agriculture participation among tertiary institution youths in Ghana

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The study was conducted to examine the determinants of agriculture participation among tertiary institutions youth in Ghana. The study first, examined what factors influences youth decision to participate in agriculture activities and second, the intensity of participation of those youths who are participating in agriculture. A multi-stage sampling procedure was used to select respondents for the study. Data collected were analyzed with the aid of descriptive and double hurdle model (DHM). Though farming comes with a lot of benefits to a nation but the result of this study reveals that majority of the youth, 315 compared to their counterparts 135, decided not to engage in farming. The findings of this research also discovered 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 decision and the intensity to engage in farming. Furthermore, insufficient capital, high cost of farm input, poor storage facility, farmers are not respected, poor income generating and inadequate credit facility are some of the constraints of youth participation in farming.

Key words: Ghana, youth, farming, double-hurdle model, participation.

INTRODUCTION

Agriculture is important to the development of any nation, Ghana being no exception (Department for Environment, 2015; Food and Agriculture Organization (FAO), 2006). The international development community has recognized that agriculture is an engine of growth and poverty reduction in countries where it is the main occupation of the poor (The World Bank, 2008). Furthermore, young people are very important resource required for every nation's development especially for sustainability in agricultural production (Ahaibwe et al., 2013). However,

with low participation of youth in agricultural production, the future of the agricultural industry is questionable. Agricultural sector in many developing countries is underperforming. This is because youth, who represent a crucial resource in agriculture and the rural economy through their roles as farmers, labourers and entrepreneurs, almost everywhere, has developed a sort of perception to agriculture (White, 2012; Leavy and Hossain, 2014). There is recognition that for Africa to achieve food security, special attention must be given to

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the youth because the youths are regarded as critical agricultural players (Brooks et al., 2013).

The agricultural sector is believed by many analysts that it is naturally endowed with multiple potentials to engross unemployed and excess or idle labour which consists of youths especially, graduates, from other sectors of the economy (Akpan, 2010). In a developing country like Ghana, the Ministry of Food and Agriculture (MOFA) in order to encourage youth participation in the agricultural sector (MoFA, 2014) has established a program, Youth in Agriculture Programme (YIAP) to change the negative perception the youth have on participation in agriculture, that is, farmers are uneducated, unskilled, physical labourers with extremely low economic return. The introduction of the program is necessary and vital to facilitate food and nutrition security for the future and also highlights the essential benefits attached to agriculture (MoFA, 2014). In Ghana, youths are distancing themselves away from agriculture in the face of government making efforts to attract them into the sector, creating employment while producing food for ever growing populations (Naamwintome and Bagson, 2013).

The researchers try to justify why increase participation of the youth in agriculture activity in Ghana is an important tool for economic growth by the following facts. The Ghanaian economy is broadly categorised into three sectors, namely, Agriculture (including Forestry and Fishing), Industry and Service. Agriculture's contribution to total employment is estimated to be 40.6%, with the Service and Industry sectors accounting for 45.2 and 14.1%, respectively as at the year 2017 (The World Factbook, 2017). This means, agriculture has lost its position as the largest employer, after dropping second to the Service's Sector. From Figures 1 and 2, the reduction in the agriculture employment rate also affects its contribution to Ghana gross domestic product (GDP). Agriculture contribution to GDP is estimated as 18.30% with the service and industrial sectors recording for 24.50 and 57.2%, respectively in the year 2017 (The World Factbook, 2017). This simply reconfirms that agriculture production and its contribution to GDP will boost should the employment rate of agriculture increase (Speth et al., 2015). Therefore, in order to halt the reduction in the agriculture employment rate, increase investment in agriculture by encouraging these young ones to participate in agriculture activities is needed. Furthermore, the current level of youth unemployment in Ghana is alarming. Youth unemployment incurred huge costs to the economy, society and their families (Maguire et al., 2013; ILO, 2013; Ajaegbu, 2012). Ghana's real GDP growth reached about 15.2% when the country began its commercial oil production in 2011 (Baah-Boateng, 2013; Ackah-Baidoo, 2016). In spite of this strong growth performance, employment generation remains a challenge (Peprah et al., 2015).

According to WDI, Ghana recorded a decline in youth unemployment rate from 11.40% in 2010 to 4.90% in

2017. In spite of this reduction in youth unemployment rate, the country continues to battle with high incidence of joblessness and job-seeking youths particularly in recent times. Ghana's unemployment in the urban areas is also found to be more prevalent than in rural areas (Baah-Boateng, 2013; Owusu-Ansah and Poku, 2012). The regular migration of people, particularly the youth, from rural area to the urban centers in search of better economic prospects which are not easy to come by, largely explains the phenomenon of the high urban unemployment rate in Ghana (Owusu-Ansah and Poku, 2012; Adaawen and Owusu, 2013). Therefore in order to curb this unemployment menace among the youth, they are encouraged seeing agriculture activity as an opportunity to generate income and create wealth because of the presence of vibrant and expanding markets for agricultural commodities (both primary and secondary commodities) in Ghana. Again, considering the current average age of farmers in Ghana, 55-60 years according to the Food and Agriculture Organization (2014) report, it calls for the need to encourage the upcoming young ones to participate in agriculture so that in some few years to come as population increases, food will be in abundance.

There are bountiful of factors contributing to youth's participation in farming. Among others factors leading to inadequate youth participating in agriculture activities may include lack of access to farm credit, limited government support, and lack of information and communication technologies (Mathivha, 2012; Dlamini, 1997). Moreover, Nnadi and Akwivu (2008) examined determinants of youths participation in agricultural production in Imo State, Nigeria. Data were generated from the three agricultural zones in the state. The empirical result revealed that age, education, marital status, parent income, parent occupation, household size and youth dependent ratio were significant factors influencing youth participation in agricultural activities. Again, Ohene (2013) research work on determinants of farmers' participation in the youth-in-agriculture programme in the eastern region of Ghana, also showed that age of respondent, education, household size, farm size, access to credit facilities and farm income of respondents were found to be significant and hence influenced participation in the youth in agriculture programme. In addition, difficulties in accessing loans, absence of the land policy, low levels of knowledge and skills in agriculture, lack of agricultural insurance and lack of extension contact have been identified as youth challenges causing less participation in agriculture (Ohene, 2013; Douglas et al., 2017; Akpan et al., 2015).

Ghana being a developing country could sufficiently absorb the surplus or idle labour in her economy because of its vast natural resource potentials in the agricultural sector (Food and Agriculture Organization, 2014). Considering the evergreen rainforest and the rich savanna soil in the south and north, respectively, not

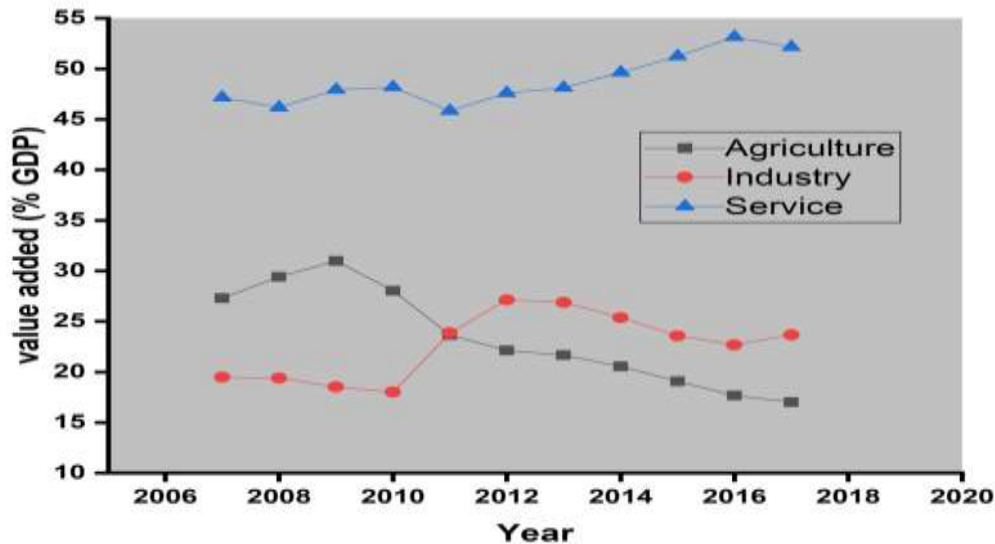


Figure 1. Value added (%GDP) of the three sectors (Service, Industry and Agriculture). Source: World Development Indicators (WDI).

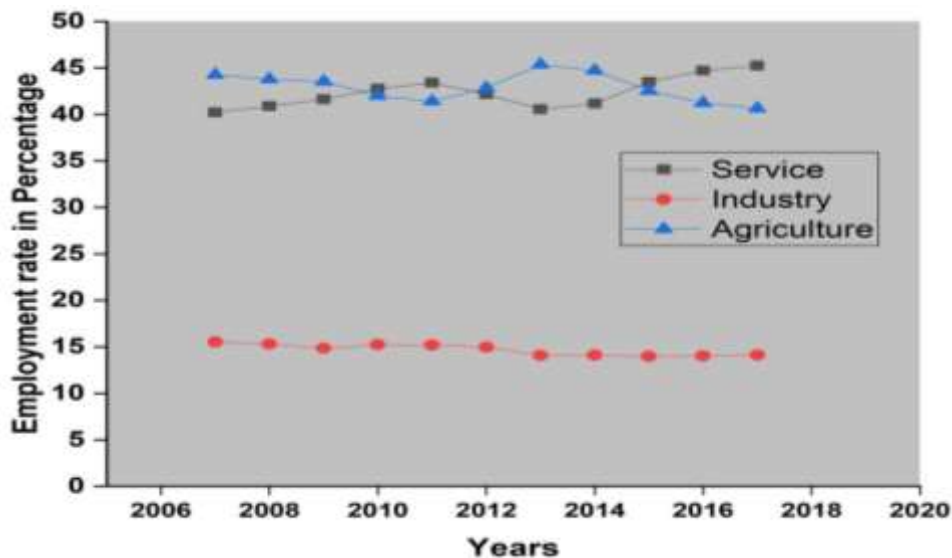


Figure 2. Employment rate of the three sectors (Service, Industry, and Agriculture). Source: World Development Indicators (WDI).

overlooking the rich water bodies that aligned the coastal states are capable of providing everlasting job opportunities for the idle and unemployed youth if these youths are ready to engage themselves in agricultural production.

However, while previous studies focus on the youth as a whole especially youths in the rural areas, their perception on farming and determinant of their involvement in agriculture activity, no known study to the best of the authors' knowledge investigated determinant

of youth in the tertiary institution decision and the intensity of participation in agriculture activities which this study does. This study objectives are therefore in twofold; first to examine the determinants of tertiary institution youth participation in agriculture activities and second to determine the intensity of tertiary institution youth participation in agriculture activities. Findings of this study will lead to better understanding of major reasons why youths are discarding or not putting in much effort in agriculture activities.

Theoretical framework of the study

Youth involvement in agriculture cannot explain without elaborating on migration studies. Many researchers have included migration as part and parcel of development studies for decades. The migration pull and push model had been employed to explain various issues relating to youth involvement in farming by few researchers like Noorani (2015) and Akpan et al. (2015). Some of the factors 'pulling' young people away from agriculture and more specifically farming, may include increased educational opportunities and higher paying jobs in the cities as well as sound economic environment. The push factors on the other hand also include: lack of access or restricted access to land, inadequate social amenities, poor transportation network and lack of opportunity for personal development. This research study examines the determinant of youth decision to engage and participate in farming and therefore employed the push and pull factor model as a guide to understand this study. There are numerous theories of migration but this study considered the dual labour market theory based on the objective of the study.

The dual labour market theory developed by Michael Piore in 1979, links migration to structural changes in the economy but explains migration dynamics with the demand side (Massey, 1999). This theory posits a bifurcated occupational structure and a dual pattern of economic organization in advanced economies. Two types of organization in the economy is expatiated by duality, namely capital-intensive where both skilled and unskilled labour are utilized, and labour intensive where unskilled labor prevails. The theory argues that migration is driven by conditions of labour demand rather than supply. This implies that the atmosphere of the economy creating a demand for both skilled and unskilled in the urban areas as compared to the rural areas causes migration. Therefore, as immigration becomes desirable and necessary to fill the jobs, policy choices in the form of active recruitment efforts follow the needs of the market. This theory places much emphasis on the pull factors of migration. Many youths are leaving the rural areas, that is, neglecting farming to the urban area based on economic, social and personal factors (Lee, 1966; Massey, 1999; Kurekova, 2011). Hence, this study rest on the fact that, youth migration (from the rural area/farming) is a function of several factors such as pull factors, push factors and economic factors as well.

METHODOLOGY

Data source and sampling procedure

The targeted population for this research was the youth in Ghana. The study was narrowed to the students at the tertiary institution. A pre-test structured questionnaire was prepared for collecting data from the respondents at the university level. Based on the experiences of pre-testing of the interview questionnaire, it was

modified and amended. The questionnaires were then finalized for the collection of data. Data on respondents' decision and the intensity of participation in agriculture activities were collected through interview schedule. Information was obtained on tertiary institution youth socio-economic characteristics, agriculture participants farm enterprise characteristics such as reason for farming, type of farming these participants have engaged themselves and their annual income earnings. Also their participation constraints information was solicited. Data was edited and coded to ensure accuracy, validity, uniformity, consistency and completeness. A double-hurdle model as previously used by Simtowe and Zeller (2007), Akpan et al. (2013), and Kuwornu et al. (2017) was employed to determine factors which influence the youth decision and the intensity of participation in agriculture activities. Data collected was analysed using descriptive and inferential statistical tools.

The multi-stage sampling technique was employed in selecting respondents for the study and again, ensure each respondent had equal chance of being selected in the sample (Stafford et al., 2006; Ascione et al., 2016). The first stage involved purposive sampling, where three universities were selected namely, University of Cape Coast (UCC), Kwame Nkrumah University of Science and Technology (KNUST) and University of Ghana (UG). These universities were purposively selected because they among the few universities in Ghana which offer agriculture as a course, that is, there exist college of agriculture in these school. The second stage employed the simple random sampling to select three halls each within these universities and in each hall. In the third and final stage, 50 students per hall were randomly selected making a total of 450 students. Among these 50 students selected includes both agriculture and non-agriculture students. A total of 135 students decided to engage and participate in farming and 315 decided not to engage and participate in farming.

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Empirical method

The study employed the independent double-hurdle model (DHM) originally formulated by Cragg (1971), with the assumption that youth decision and intensity of participation in agriculture activity are two distinct or independent decisions. In addition, different sets of variables are believed to influence the decisions of a youth decision to participate in agriculture and extent or effort put in the participation. The model is equivalent to a combination of a probit or logit and truncated regression model (Worku and Mekonnen, 2012). This work employed logit instead of probit since both econometric regression models are almost the same. A different latent variable is used to model each decision process, with a logit model to determine decision of engagement level one and a Tobit model to determine the intensity of participation (Blundell and Meghir, 1987). The first hurdle, a binary Logit model was used to identify significant factors that influence youth decision to engage in agriculture. This method was chosen because it is a standard method of analysis when the outcome variable is dichotomous (Hosmer et al., 2013), measured as having a value of 1 or 0, where 1 implies decision to something and 0 implies otherwise. Implicitly, the specified model is shown in Equations 1 and 2. The Logit model which captures youth decision to engage in farming is shown in Equations 4 and 5.

Tertiary youths are partitioned into two categories, participants in agriculture ($S_n > 0$) and non-participants ($S_n = 0$). Where S_n is the intensity of participation (amount of capitals invested in the

Table 1. Independent variables measurements, description and expected sign.

Code	Variable	Description	Expected sign
PPFI	Perceived price of farm input	1, if respondent perceives price to be high; 0, otherwise	-
INCPE	Income perception	1, if respondent perceives farming income to be high; 0, otherwise	+
AC	Access to credit	1, if respondent has access to credit; 0, otherwise	+
AL	Access to land	1, if respondent has access to land; 0, otherwise	+
EDU	Education (years)	Respondent number of years of schooling	-
AGE	Age (years)	Respondent age	+/-
GEN	Gender	1, if respondent is a male; 0, female	+
YOCOS	Youth Course of study	1, if respondent is an agriculture student; 0, otherwise	+
PO	Parent occupation	1, if respondent parents job is farming; 0, otherwise	+

agriculture activities carried out by participant). Let Y_1 represent the category to which the youth belongs, since the participant and non-participant partitions give an ordered response. Let the ordered response Y_1 be such that:

$$Y_{1i} = 0 \text{ if } S_{ni} = 0 \quad (1)$$

$$Y_{1i} = 1 \text{ if } S_{ni} > 0 \quad (2)$$

where the index equation is written as:

$$Y_1^* = \beta_{1i} Z_{1i} + \varepsilon_{1i} \quad (3)$$

where Y_1^* is a latent discrete accessibility choice variable that denotes binary censoring, which is the utility the youth gets from participating in the agriculture. Z_{1i} is a vector of explanatory variables hypothesized to influence farming choice, β_{1i} is a vector of parameters and ε_{1i} is the standard error term.

$$\text{Prob}(\text{Access} = 1) = \log\left(\frac{p}{1-p}\right) \quad (4)$$

$$Y_i = \beta_0 + \beta_1 \text{PPFI}_i + \beta_2 \text{AC}_i + \beta_3 \text{PO}_i + \beta_4 \text{AL}_i + \beta_5 \text{EDU}_i + \beta_6 \text{YOCOS}_i + \beta_7 \text{AGE}_i + \beta_8 \text{GEN}_i + \beta_9 \text{INCP}_i + \varepsilon_i \quad (5)$$

Finding the determinants of the intensity of participation was achieved by estimating the equation of the second hurdle. The second hurdle involves an outcome equation, which employs a truncated regression (tobit) model to determine factors affecting the actual amount of capital used for agriculture by a youth who decided to participate in farming. This stage uses observations only from respondents who reported positive or greater than zero amount of capital. The truncated model is expressed as shown in Equation 6.

$$S_i^* = Z'_{2i} \beta_2 + v_i, v_i \sim N(0, \delta^2) \quad (6)$$

S_i is the observed size of money (capital) by the sampled

respondent. For a youth who does not engage in farming, S_i cannot be measured and was set to be equal to zero (0). This indicates that the observed amount of capital is zero either when

there is censoring at zero $S^* \leq 0$ or if there is faulty reporting, or due to some random circumstance. The empirical model used to estimate the truncated regression model of the intensity of participation among the youths' is as follows:

$$S_i^* = \beta_0 + \beta_1 \text{PPFI}_i + \beta_2 \text{AC}_i + \beta_3 \text{PO}_i + \beta_4 \text{AL}_i + \beta_5 \text{EDU}_i + \beta_6 \text{YOCOS}_i + \beta_7 \text{AGE}_i + \beta_8 \text{GEN}_i + \beta_9 \text{INCP}_i + \varepsilon_i \quad (7)$$

where the dependent variable, S_i = intensity of participation (Amount of capital invested in agriculture activity by a youth measured in Ghana Cedis (GH¢)) and Y_i = farming participation (1, if participated; 0, otherwise) $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$ represent parameters of the model to be estimated and ε_i represents the stochastic error term.

RESULTS AND DISCUSSION

Descriptive statistics of socio-economic characteristics of respondents

The descriptive statistics of respondents is shown in Table 1. The result revealed an average age of about 26 ± 5.86 years for youth in the study area. This is because the targeted populations were students in the university. The result also showed that, about 65, 39, 40, 39 and 48% of the respondents had access to credit, perceived that farm inputs (fertilizer, seed, etc.) price were high, parents engage in farming as their occupation, had basic farming knowledge and perceived that, one can generate high income in farming, respectively. An average amount of GH¢1246.67±708.88 was revealed to be the amount of capital spent on the farm by the respondents. This is an indication that tertiary institution youth intensity of participation in agriculture activities are not encouraging. Also, about 65% of the respondents

Table 2. Socio-economic characteristics of respondents.

Variable	Mean	SD
PPFI	0.39	0.49
INCPE	0.48	0.50
AC	0.65	0.48
AL	0.38	0.48
EDU	15.10	2.02
AGE	25.71	5.86
GEN	0.65	0.48
YOCOS	0.30	0.46
PO	0.40	0.49
Farming capital (Ghana Cedi)	1246.67	708.88

Source: Survey Results, February - May (2018).

Table 3. Reasons for farming.

Reason	Frequency	Percentage
Parental influence	19	14.1
Income generating (Profit)	127	94.1
Self-employment	61	45.2
Access to land	29	21.5

Source: Survey Results, February - May (2018).

were male youth. The result also showed that 25% of youth interviewed were married. Only 38% of the respondents sampled had accessed to land for farming.

Participants farm enterprise characteristics descriptive statistics

From the study, it was revealed that out of the 135 participants, 58 (43%) of the respondents were non agriculture students and the remaining 77 (57%) respondents were agriculture students. These participants were asked the following questions: the reason why they choose farming, the kind of farming activities they involved themselves in and their average income per year.

Table 2 shows the reason why these 135 respondents decided and participate in farming. From the table, farming being an income generating job records the highest, that is, 127 (94.1%) respondents see farming as a source of income, farming serving as self-employment is the next reason, that is, 61 (45.2%) respondents consider farming as a substitute for being jobless. Access to land and parental influence is also identified as the reasons why these respondents chose farming. About 29 (21.5%) of the respondents had access to land through inheritance, lease and rent whiles 19 (14.1%) participate in farming because their parents are farmers and due to

that, influenced their young ones.

Participants' reasons for farming

Type of farming system engaged in by participants

The kind of farming activities carried on by these participants is also shown in Table 3. Majority of the respondents, 126 (93.3%) are into crop farming such as maize, cassavas, beans, yams and plantains. The reason why most of these students chose crop farming is because, accessing a market for these crop products was relatively easy (Table 4). Again, these crops are traditional staple products that one is more than likely to be exposed in Ghana. Livestock farming took the second position. A total number of 11 (8.1%) respondents raise animals such as cows, goats, pigs and sheep. They also decided to raise these animals because one can easily access market for these products. Respondents engaged in mixed farming, that is, raising animal and growing crops at the same time are 10 (7.4%). Despite of the divided attention and resources over several activities associated with mixed farming, thus leading to reduced economies of scale, these farmers chose to practice it because of the possibility of reducing risk and re-utilizing resources. Fish farming and poultry recorded 5 (3.7%) and 3 (2.2%) respondents, respectively. The less

Table 4. Types of farming activities.

Types of farming	Frequency	Percentage
Fish farming	5	3.7
Livestock	11	8.1
poultry	3	2.2
crops	126	93.3
Mixed farming	10	7.4

Source: Survey Results, February - May (2018).

Table 5. Annual income earnings from farming.

Farming income/annual (in Ghana cedis, GH¢)	Frequency	Percentage
100-1000	24	42.1
1100-2000	15	26.3
2100-3000	11	19.3
Above 3000	7	12.3

Source: Survey Results, February - May (2018).

participation of these kinds of farming can be attributed to the following: first, a lot of money is needed to sustain the birds and fishes. Second, most people do not know the technicalities in raising these kinds of animals; therefore, in order not to risk their resources, they prefer other options to these ones.

Annual income earnings from farming

Monthly income earnings from farming are shown in Table 5. Out of the 135 participants, only 57 (42.2%) reported their monthly income. From the table, 24 (42.1%) participants earn 100 to 1000 GHC per month. Again, 15 (26.3%) and 11 (19.3%) participants reported monthly income earnings of GH¢1100-2000 and GH¢2100-3000 per month, respectively. Only a few of the participants, 7 (12.3%), concluded that they earn above GH¢3000 per month. All those who earn above GH¢3000 in addition to 10 participants revealed that, they have market to sell their goods.

Differences between means of the independent variables for participants and nonparticipant in farming

From the Table 2, perceived price of farm inputs, access to credit, basic farming knowledge, access to land, and perception on income were all significant at 1%. Education was also significant at 5%. This implies that there are significant differences between the means for participants and nonparticipants in terms of perceived

price of farm inputs, access to credit, basic farming knowledge, access to land, education and perception on income. There are, however, no significant differences between means for participants and non-participants for the rest of the variables (Table 6).

Determinant of youth decision and intensity of participation in agriculture activities

Results of the determinants youth decision and intensity to engage in agriculture activity are shown in Table 7. The first hurdle reveals that the Log Likelihood and chi square value are -196.43532 and 101.82, respectively, while the Log Likelihood for the second hurdle was -1277.1122. The entire models were significant at 1% levels of probability. The results showed that the coefficients of perceived price of farm input, access to credit, access to land, education, youth courses of study, gender of the youth and youth perception on income were found to be significant at the various levels of significance ($p < 0.05$, $p < 0.01$). The results in the table further revealed that while perceived price of farm input reduces participation and intensity of farming, access to credit, access to land, youth courses of study increased participation and intensity of farming. The more youth perceive farm input prices to be high by Gh¢1 would reduce the odd of increase in participation by 0.46 times and intensity by 93.20 cedis. This is as a result that, most of these youths are not working and do not have enough money to purchase high or expensive inputs. This result is in consistent with the findings of Goldsmith et al. (2010) who indicated that, high price of products leads

Table 6. Differences between means of the independent variables for participants and nonparticipant in farming.

Variable	Participants (n=135)	Non Participants(n=315)
Price of farm input perception	0.2815(0.3885)***	0.4349(0.0279)
Access to credit	0.8519(0.0307)***	0.5587(0.0280)
Basic farming knowledge	0.5407(0.0431)***	0.3143(0.0262)
Access to land	0.5852(0.0426)***	0.2857(0.0255)
Education (years)	14.7629(0.1722)**	15.2476(0.1174)
Marital status	0.2667(0.0382)	0.2381(0.0240)
Age (years)	25.2222(0.4871)	25.9175(0.3349)
Gender	0.6222(0.419)	0.6635(0.0267)
Parent occupation	0.5481(0.0429)	0.3302(0.0265)
Income perception	0.7333(0.0382)***	0.3683(0.0272)

*** represent significant levels at 1%.

Source: Survey Results, February - May (2018).

Table 7. Model estimate of determinant of youth decision and intensity to engage in agriculture activities.

Variable	First hurdle (decision to engage in agriculture activities)			Second hurdle (intensity of participation)		
	Odd ratio	Std. Err	z	Coefficient	Robust Std. Err	Marginal effect
PPFI	0.4620429***	0.1244281	-2.87	-388.1203**	188.5471	-93.2069
AC	5.481302***	1.720702	5.42	875.7002***	219.5019	210.299
PO	1.487312	0.4236066	1.39	247.4977	189.186	59.43645
AL	3.290897***	1.019529	3.84	844.1424***	214.7454	202.7204
EDU	0.8160579**	0.0653256	-2.54	-69.42743	58.76	-16.67296
YOCOS	5.988001***	1.582618	6.77	1321.989***	206.8289	317.4749
AGE	1.009215	0.0326003	0.28	25.82828	20.16603	6.202648
GEN	1.516646	0.4431459	1.43	-520.3403***	187.6828	-124.9595
INCP	1.197661	0.4264476	0.51	947.5468***	189.5838	227.5529
constant	0.5629017	0.6655144	-0.49	-1902.197**	914.0864	-
	Log likelihood = -196.43532, Pseudo R ² = 0.2854 Prob > chi ² = 0.0000 Wald chi ² (9) = 101.82			Log likelihood = -1277.1122, F(9, 441)= 23.35, Prob > F = 0.0000 Pseudo R ² = 0.0599		

** and *** represent significant levels at 5 and 1% respectively.

Source: Survey Results, February - May (2018).

to low patronage holding all other things constant. An increase in access to credit by Gh¢1 and land by 1acre would increase participation by 5.48 and 3.29 times, respectively and intensity by 210.299 and 202.72 cedis, respectively too. This result confirms Yuan and Gao (2012) and Chandio et al. (2017) that access to credit relaxes the financial constraint and this helps farmers to diversify their portfolio. Again, it supports Cotula et al. (2004) who explains that access to land brings hope to the youth because securing a land will have implications for the distribution of wealth, rates of economic growth and the incidence of poverty if used properly.

However, while an increase in education by a year

reduces the odd of increase in participation by 0.82 times, the intensity of participation fall by 124.96 cedis among male youth farmers. The result suggests that, as youth acquired more years of formal education, there is an increase tendency of agricultural diversification. The result suggested that most youth perceived agricultural production is not profitable enough or yield fast income as compared to non-agro based businesses. Therefore, seek for greener pastures (white collar job) in the urban area, neglecting farming. This result is also in agreement with the research findings of Akpan et al. (2013) who reported that educated people give less priority to farming because they have higher chance to find less tedious job in the cities that can earn them huge sum of income.

Table 8. Constraints to youth engagement in farming in Ghana.

Constraint	Percentage	Ranking
Insufficient capital	72.40	1
High cost of farm input	62.70	2
Poor storage facility	61.80	3
Farmers are not respected	61.40	4
Inadequate land availability	57.70	5
Poor income generating	55.30	6
Inadequate credit facility	44.70	7
Energy demanding	43.20	8
No agriculture insurance	40.60	9
No basic farming experience	35.80	10

Source: Survey Results, February - May (2018).

Similarly, a number increase in agriculture students increases participation by 5.98 times and intensity by 317.47 cedis. Meanwhile, a 227.55 cedis increment in the intensity occurs as youths perceive Gh¢1 increase in income, thus, perceives a higher income. This result explains that, if agriculture becomes more remunerative and rewarding in terms of incomes and profitability, it will attract the youths to participate in it, therefore, increasing the amount of capital spent so as to increase production and income. These findings agree with the research study of Chikezie et al. (2012) and Ahaibwe et al. (2013). They reported that high income from agriculture activities encourages individuals to participate in agriculture activities.

Constraints to youth involvement in farming

The results on the constraints to participation in agriculture activities in Ghana are shown in Table 8. Qualitative tools such as percentages and ranking were employed to identify the most important constraints. Results revealed that, insufficient capital (72.40%) is the most important constraint faced by tertiary institution youth in Ghana. High cost of farm input (62.70%) and poor storage facilities (61.80%) also serves as hindrances to youth involvement in agriculture in the country. Farmers are not respected (61.40), inadequate land availability for farming (57.70%) and poor income generating (55.30%) as well inadequate credit facility (44.70%) are other significant deterrent to tertiary institution youth involvement in farming. In addition, the study identified farming as energy demanding (43.20%) and no agriculture insurance (40.60%) as mild constraints to youth involvement in farming. However, the study asserted that, the opinion those youths having no farming experience (35.80) is not upheld by majority of tertiary institution youth in the country.

CONCLUSION AND RECOMMENDATION

In conclusion, youth participation is a key way to alleviate unemployment, food insecurity, immoral social behaviour like crimes and drug abuse and extreme poverty in developing countries of which Ghana is not excluded. Though farming comes with a lot of benefits to a nation but the result of this study reveals that majority of the tertiary institution youths, 315 (70%) compared to their counterparts 135 (30%), decided not to engage in farming. The findings of this research has also discovered that, youth perception of farm input price, youth level of education, access to credit, access land and youth course of study at the tertiary institutions, gender composition of the youth, and youth perception of farm income significantly affect decision and the intensity to engage in farming. Furthermore, insufficient capital, high cost of farm input, poor storage facility, farmers are not respected, poor income generating and inadequate credit facility are some of the constraints of tertiary institution youth participation in farming.

Based on the findings of this study, it is recommended that in order to push the youth into farming, communities and the government have a role to play. The following factors should be addressed and dealt with. They include:

- (1) Motivating successful youth farmer through merit awards during every farmer's day celebration.
- (2) Provision of subsidies on major farm inputs prices such as fertilizers, seeds and other farming equipment.
- (3) Putting on measures to curtail credit and land constraints so that, sufficient capital and access to land could be acquired by the youths to participate in farming.
- (4) Provision of small farm in all primary and junior high schools in addition to the agriculture subjects studied in schools for practical purposes. This will give the students basic farming experience and increase their love for agriculture.

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CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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